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POLLUTION OF THE INTERSTATE WATERS OF THE LOWER SAVANNAH RIVER AND ITS ESTUARIES, TRIBUTARIES AND CONNECTING WATERS-GEORGIA-SOUTH CAROLINA. PROCEEDINGS OF CONFERENCE, SECOND SESSION, HELD AT SAVANNAH, GEORGIA ON OCTOBER 29, 1969

Federal Water Pollution Control Administration
Washington, D. C.

1969

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SECOND SESSION OF THE CONFERENCE IN THE MATTER OF POLLUTION OF THE INTERSTATE WATERS OF THE LOWER SAVANNAH RIVER AND ITS ESTUARIES, TRIBUTARIES AND CONNECTING WATERS IN THE STATES OF GEORGIA AND SOUTH CAROLINA

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Downtowner Motel
Savannah, Georgia
October 29, 1969

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Second Session of the Conference in the Matter of Pollution of the Interstate Waters of the Lower Savannah River and Its Estuaries, Tributaries and Connecting Waters in the States of Georgia and South Carolina, held at the Downtowner Motel, Savannah, Georgia, on Wednesday, October 29, 1969, at 9:30 a.m.

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PROCEEDINGS

OPENING STATEMENT
BY
MURRAY STEIN

MR. STEIN: The conference is open.

This second session of the conference in the matter of pollution of the Lower Savannah River and its estuaries, tributaries and connecting waters in the States of Georgia and South Carolina is being held under the provisions of Section 10 of the Federal Water Pollution Control Act, as amended. Under the provisions of the Act, the Secretary of the Interior is authorized to initiate a conference of this type when on the basis of reports, surveys, or studies he has reason to believe that pollution subject to abatement under the Federal Act is occurring.

The conference was first held on February 2, 1965, in Savannah, Georgia.

As specified in Section 10 of the Act, the official State water pollution control agencies have been notified of this conference. These agencies are the Georgia Water Quality Control Board and the South Carolina Water

Pollution Control Authority.

Both the State and Federal Governments have responsibilities in dealing with water pollution control problems. The Federal Water Pollution Control Act declares that the States have primary rights and responsibilities for taking action to abate and control pollution. Consistent with this, we are charged by law to encourage the States in these activities.

At the same time, the Secretary of the Interior is charged by law with specific responsibilities in the field of water pollution control in connection with pollution of interstate and navigable waters. The Federal Water Pollution Control Act provides that pollution of interstate or navigable waters which endangers the health or welfare of any persons, shall be subject to abatement. This applies whether the matter causing or contributing to the pollution is discharged directly into such waters or reaches such waters after discharge into a tributary.

The purpose of the conference is to bring together the State water pollution control agencies, representatives of the U. S. Department of the Interior, and other interested parties to review the existing situation, and the progress which has been made, to lay a basis for future action by all parties concerned, and to give the States, localities, and industries an opportunity to take any indicated remedial action under State and local law.

The Georgia Water Quality Control Board will be represented by Mr. R. S. Howard, Jr., and the South Carolina Water Pollution Control Authority will be represented by Mr. William Linton. The Federal conferee is Mr. John Thoman, our Regional Director with headquarters in Atlanta, Georgia. My name is Murray Stein. I am from headquarters of the Department of the Interior, and the representative of Secretary Walter J. Hickel.

The parties to this conference are the official State water pollution control agencies and the U. S. Department of the Interior. Participation in this conference will be open to representatives and invitees of these agencies and such persons as inform me that they wish to present statements. In addition, we have invited the city of Savannah, Georgia, and the Union Bag-Camp Paper Corporation to attend and participate in this conference. However, only the representatives of the State water pollution control agencies and the U. S. Department of the Interior constitute the conferees.

Now, a word about the conduct of the conference. The conferees will be called upon to make statements.

In addition, the conferees may call upon participants whom they have invited to the conference to make statements. We also will call upon all interested parties who have indicated that they wish to make a statement to make one. In other words, everyone who wants to will have an opportunity to be heard.

At the conclusion of these statements, we will ask the conferees to either comment or to ask questions. We hope to proceed in an informal manner. Only the conferees will be given the privilege of asking questions or commenting. However, if you feel you have anything to say, just hold that, and when a time comes, you will be given an opportunity to come up and make your statement.

At the end of all the statements, we will have a discussion among the conferees and try to arrive at a basis of agreement on the facts of the situation. Then we shall attempt to summarize the conference orally, giving the conferees, of course, the right to amend or modify the summary.

A record and verbatim transcript of the conference is being made by Mrs. Marilyn Hall for the purpose of aiding us in preparing the summary, and also for providing a complete record of what is said here. It usually takes about 3 or 4 months for the transcript to come out in printed form. If you wish a record beforehand, you can check with Mrs. Hall, who is an independent contractor, and make your own arrangements with her.

I should like to indicate that we do not print our transcripts in color, so take into account that any charts you present will be reproduced in black and white, and try not to refer to color if you use graphic aids in your presentations as they tend to be meaningless in the reading of the transcript.

We will make copies of the summary and transcript available to the official State water pollution control agencies and if you want copies of these get in touch with your State agency. We have generally found that for the purpose of maintaining relationships within the States that the people should ask for them through their State agency rather than come directly to the Federal Government. The reason for this is that, when the conference has been concluded, we would prefer that people who are interested in the problem to follow the normal relations in dealing with the State agencies rather than the Federal Government. This has worked successfully in the past and we will be most happy to make this material available for distribution. The technique that we have used in conducting the conference in the past has been useful in developing the problem, the areas of agreement, and pointing their way toward future actions and solutions.

I would suggest that all speakers and participants other than the conferees making statements come to the lectern, and identify themselves for the purpose of the record. Also if you have copies of your statement, please make them available to the reporter. If you have any others, the conferees at this table would be glad to have them, but the priority is clear: the first copy goes to the reporter, and this will make her job much more easy and will result, I think, in our getting a top-notch transcript.

Now, while the conference is going on, if you have any questions or have any desire to participate and you have not already been in touch with your State agency, you can direct your questions to our national hearing and conference coordinator, Mrs. Rheta Piere who is here. Now, Mrs. Piere, would you stand up so they can see you, and if you have any problems on any of the procedures or if you want any material please get in touch with her.

Now, I would like to call on Mr. John Thoman for the Federal Government.

Mr. Thoman.

STATEMENT OF JOHN R. THOMAN, REGIONAL DIRECTOR, SOUTHEAST REGION, FEDERAL WATER POLLUTION CONTROL ADMINISTRATION, DEPARTMENT OF THE INTERIOR, ATLANTA, GEORGIA

MR. THOMAN: At the time of the initial session of this conference, the State of Georgia Water Quality Control Board had not been in business very long and, as a consequence, the Federal Government at that time our predecessor agency, U. S. Public Health Service, presented the technical report at that initial meeting.

Since that time, under the very able and stimulating leadership of Rock Howard, the State of Georgia has made tremendous strides in developing its own competencies and its own water pollution control group to the point where, for this particular session, it has not been necessary for the Federal Government to assist in any way in developing the technical information that will be presented here. As a consequence, the entire technical presentation will be made by Mr. Howard's group.

We do have one Federal representative who has indicated that he would like to talk to the meeting. This

Col. J. S. Egbert

is Colonel John S. Egbert, the District Engineer of the Savannah District of the U. S. Army Corps of Engineers.

Colonel Egbert, would you like to present a statement, sir?

MR. STEIN: Please come to the lectern if you would, sir.

STATEMENT OF COLONEL JOHN S. EGBERT,
DISTRICT ENGINEER, SAVANNAH DISTRICT
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COL. EGBERT: Mr. Stein and Mr. Thoman, other distinguished gentlemen, I asked to be able to make a statement, first of all, to express for the Corps of Engineers, our overall interest in the subject of pollution, and specifically in this case our very great interest in the pollution problems of the Savannah River; second, of course, to highlight some of those features of this large problem which have been of specific interest to the Corps.

The Corps of Engineers, as an agency, is charged with certain responsibilities for the public's welfare, and we are then, of course, interested in various aspects of the water quality problem and specifically water pollution abatement.

We are concerned primarily along the Lower Savannah River with navigational features for the Savannah Harbor. As part of our responsibilities, we continually analyze sediment load and bottom conditions along these navigable waterways. We issue permits for dredging, filling, and other constructions in or adjacent to the waterways, and we do so only after coordination with all of the interested Federal, State and local agencies. I think, for example, Mr. Rock Howard's unit -- on problems such as this -- works very closely with us.

The criteria and requirements for pollution control established by these other agencies are incorporated as a part of our permits. I think many of you in the room know this already. In the specific case of the Savannah District, we also report -- this is a Corps function -- oil spills and illegal deposits of solids into the navigable waterways, as well as advising the Justice Department when further legal actions, including prosecution, are called for.

In cooperation with the FWPCA, the Georgia Water Quality Control Board and the Chatham County Health Department, the District -- that is the Savannah District -- is sampling at eight locations from Cockspur Island up to the U. S. Highway 17 bridge. We collect samples at 3-foot, 15 and 20-foot depths, and record water temperature, dissolved oxygen concentration, pH, and conductivity.

Now, our samples are sent to the county for the following analyses, which are then forwarded to the State control board. These are chlorides, solids, turbidity, alkalinity, BOD, and coliform counts. These are all water quality criteria.

In addition to this sampling program, of course, we operate also on a cooperative basis a continuous monitoring or recording monitoring station at the Fort Jackson Historical Site. I had, parenthetically, the pleasure of going down there recently and going over it, and am very pleased with the results which we have obtained from it.

The following parameters are recorded for this station for the four-foot depth at the site: dissolved oxygen, water temperature, pH, and conductivity. The monitor charts that we receive from this recording station are sent weekly to the FWPCA's Southeast Water Laboratory at Athens for further analysis and interpretation.

Samples are also taken for radioactivity and ion analyses in cooperation with the Atomic Energy

Commission's Savannah River Plant. I outlined these because these are services which we have established and which we have worked diligently on in cooperation with Rock Howard's group and with the FWPCA, specifically Mr. Thoman's unit.

Of course, we recognize, too, that the water released by our large multipurpose projects upstream -- specifically Hartwell and Clark Hill Reservoirs -- certainly have definite effects downstream on the lower river basin. Since 1967, we have made extensive investigations on these reservoir releases with particular attention to dissolved oxygen, temperature, and iron and manganese concentrations.

Since completion of the impoundments upstream, flows in the river section between Clark Hill Dam and the head of the tidewater above the city of Savannah have been markedly stabilized. Flood hazards have been decreased, and low stream flows have been greatly increased, thereby improving overall water quality conditions in the river.

Beginning with the impoundment of waters in Clark Hill Reservoir in 1952, the river below cleared considerably. Water quality studies showed that turbidity and color decreased, and that river temperatures between the dam and above the Augusta area are lowered during the warmer months. Increases in iron and manganese in solution have occurred in and below Clark Hill Reservoir and will vary downstream depending on stratification conditions in the reservoir. Other chemical characteristics were not materially changed. Of importance to stream sanitation, the dissolved oxygen determinations showed 90 percent or more of saturation in the river above Augusta. Results of bacteriological and biological studies indicated good stream conditions above Augusta.

As the entire river basin becomes more highly developed -- we think this is important -- with such large-scale improvements as the Trotters Shoals Reservoir which we hope to start construction on in 1971, the completion of the Savannah Harbor Sediment Basin and Tide Gate Structure, as well as the harbor deepening and widening, you can see the environmental impact is going to increase.

We are currently planning to continuously monitor the water quality of our reservoir releases as well as the sampling systems or the sampling system which we have set up for the reservoirs. Some of our other programs will enable us to evaluate existing conditions of the river basin's water quality and to identify any changes brought about by future development.

The Savannah District of the Corps of Engineers is continuously -- and I know during my own tenure here this has been a subject of considerable time and interest -- striving to develop our water resources for the benefit of all users, not only for power and for water supply, but for flood control and for navigation. We have and are spending considerable time, effort and funds to reduce sedimentation on all these projects to improve low flows, and hence the water quality for fish and wildlife needs, and to provide for healthy recreational facilities. In short, our interest is a total interest.

We consider ourselves a partner with the other public agencies in this joint effort to protect our environment, and want the members of this conference to know that if there is anything we can do in addition to those steps which we have already taken, that we will be very happy to do so and want to assure you of our continued cooperation in trying to at least cope with this major problem.

MR. STEIN: Thank you, Colonel, for a very full and excellent statement.

As many of you may know, the Corps of Engineers is our sister agency in the field of water pollution control and, as a matter of fact, although we are in different Departments, the Corps of Engineers and the

Federal Water Pollution Control Administration both have gone before the same committees of the Congress, both in the House and the Senate, and the Public Works Committee. We sort of go before different committees than the rest of our Departments go because we are so closely allied with this water problem.

Are there any comments or questions?

MR. THOMAN: I have one question.

Colonel, in the last 2 or 3 years, have there been some changes made in the disposal of dredged materials from the harbor here, or is it still the same procedure, or have you changed the disposal site?

COLONEL EGBERT: No, basically -- you are talking now about the disposal of dredged material. Our procedure is basically the same. What we are trying to do is avoid a lot of that by concentrating all of the dredging activity in one area, and that specifically will be one of the main benefits of what I referred to as the sediment basin, where we trap most of our solids in the sediment basin and then pump them out into one area.

As a corollary to that, I would say that we have been -- and I know Mr. Rock Howard's group has also been -- very active in trying to tighten up on such problems as adequate diking, trying to control the dredged deposits when you put them into the disposal areas. There are a lot of other problems associated with this, of course.

I think that we have made considerable improvements in these respects. I don't think we, by any means, have made all of the headway that we can make. So we are continuing to work on it, but in the specific case of the harbor, the sediment basin will make a great deal of difference. Also we have had an extraordinary amount of dredging over the past few months because of the widening and deepening project.

MR. THOMAN: Thank you very much.

MR. STEIN: Colonel, may I ask: Do you put your dredged spoil behind the diked area in all cases, or do you dump in the open channel?

COLONEL EGBERT: No, specifically we put it behind the dike.

MR. STEIN: Then I take it the question is to get these dikes as impervious as possible so the material doesn't seep through.

COLONEL EGBERT: Yes, sir, that is the primary purpose, and there are a lot of other associated problems with it, but mainly to keep it out -- keep the turbidity and everything else; keep it flowing back in after you have pumped it out.

MR. STEIN: That is right.

I think we have this problem all over. In working on these pollution problems, once we have the water quality up to a certain level and have the pollution under control, the disposal of the dredged spoil comes more and more to the fore, because in some of these polluted rivers the problem is so great that just the addition of the spoil kind of mass affects the general condition.

But we are working together with the State on these requirements, and in many of the cases we are trying to come up with improved methods of controlling the disposal of spoil material.

COLONEL EGBERT: I think it is significant -- there are two things really significant, in my own experience working on this problem. One of them relates to Mr. Howard's group, but the first is the amount of time and the prominence that this particular subject has enjoyed on the Chief of Engineer's agenda, the Division of Engineers Conferences and District Engineers Conferences. We have gone over this several times, and the dissemination of any improvements that one district makes -- I think it is important to disseminate this to other districts so we can have the advantage of it.

But the second and probably just as important at our level is the considerable amount of — and I commented on this before — tightening up of our diking requirements, and the considerable amount of control that the State has been exercising on private dredging also.

All of our permits now get a pretty careful airing, so we try to exercise that control on our own contractors, plus we have our own dredging. While we work on that, we also have worked with the State, and they have tried to maintain pretty tight controls themselves.

MR. STEIN: Thank you, Colonel.

Just one more comment before I turn this over. On the question of time, let me try to put this in perspective: I think the kind of dredged material we get coming out really, in most cases, is a minor pollutant compared to the other pollutants going in. But I think if you have lived with the Great Lakes pollution problem the way I have through these past several years and gotten into the dredging controversy of disposal of dredged material, and have had to have the Corps and us spend time with congressional and political delegations for weeks on end to work on this, that you would recognize the time that is spent in it.

Now, again, to put this in perspective: I think not that the dredged material by itself is such a tremendous operation, because if you take a large industry in a large city and you figure out what they are putting out in one day, all of the dredged material you are going to put out in a year can't begin to match what they can put out in a day.

However, if the Federal Government or a State is going to ask someone to clean up pollution, people are going to ask us to get our own house in order, and we have to be like Caesar's wife above suspicion. So I suspect we are going to have the spotlight put on us, and we and the Corps have been working very diligently -- I hope -- on this problem.

But I want to make one factor clear before we get too emotional about this: that is, the amount that we are dealing with here, as compared to the other pollutants coming into the river or any water course, is generally relatively minor.

Mr. Howard.

MR. HOWARD: I wanted to make a point about sediments: that recently the Southeastern Laboratory of FWPCA came out with a conclusion that the north Georgia colloidal clay particles were aiding water pollution control up in the Oconee River by adsorbing a lot of the pollutants. We want to have that straight in the record as to that.

Another point of technical interest would be the fact that where we have the monitor located at Fort Jackson is the approximate sag point in that vicinity of our problem in the Savannah River.

MR. STEIN: I am glad those clay particles are good for something. You know I believe I have got the only yard in Virginia that has Georgia clay. I am not sure I can grow any grass in it.

COLONEL EGBERT: I might add, for the benefit of those who aren't as familiar with the dredging materials, I know that a lot of members of the city are very aware of the fact that in the Savannah Basin we have been fortunate in certain areas in being able to dredge sand in many areas.

Of course, Hilton Head Island really is a product of -- not the basic island which was largely a marshland at one time -- but its usability at the present time as a potential industrial site, and so on, is largely a result of dredged material. We are not always so lucky, and when you get into organic deposits in some of these other areas, you do have a problem, and you have a problem that you have to look at pretty carefully.

MR. STEIN: Thank you, Colonel.

Any other comments or questions?

If not, we would like to call on Georgia at this time. But before I call on them, I have a few comments to make. I think it should be recognized that the major statement, as far as I can see, at this conference is going to be made by the State of Georgia. This is indicative of several things: One, I think since Rock Howard took over the leadership of the Georgia agency, Georgia has developed one of the most active State water pollution control programs in the Nation. It is really one of the outstanding ones. I think, again, it is a tribute to real creative Federal-State relations and to the high quality of Georgia's work that at a conference of this type the basic technical work, the work being done by Georgia, in cooperation with the Federal people, and the contacts of Georgia with the local situation on the day-to-day relations dealing with the problem, have placed the Georgia people in the position where no one is better qualified to make the full presentation and set forward the situation here in a fairer manner than the representatives from Georgia.

I, as a representative of the Federal Government want to call that to everyone's attention, being the first to acknowledge it, because I think we have come a long way. This is a wonderful development in the field of water pollution control -- one which we have just been able to achieve with a few States. I think Georgia certainly is to be commended in taking the lead in this whole area.

I would like to call on Mr. Rock Howard of Georgia.

Mr. Howard.

MR. HOWARD: May we go off the record a moment?

(Discussion off the record.)

MR. HOWARD: We will go back on the record.

STATEMENT OF R. S. HOWARD, JR., EXECUTIVE SECRETARY, GEORGIA WATER QUALITY CONTROL BOARD, ATLANTA, GEORGIA

MR. HOWARD: Mr. Chairman, I am very grateful to you for your very kind remarks about Georgia's program. We have tried hard, and we think we have made progress. I would like to tell the distinguished conferees and ladies and gentlemen, it is a pleasure to participate in this reconvened conference to appraise progress made in pollution abatement of the Lower Savannah River, and to determine measures now needed to complete a program to enhance and protect the quality of these interstate waters.

In the interest of having a completely accurate record, however, of this conference, I must correct an erroneous statement made recently in Dallas by Assistant Interior Secretary Carl Klein. Talking at the 42nd Annual Meeting of the Water Pollution Control Federation, Mr. Klein stated that Georgia had requested this conference be reconvened. Such is not the case, although we welcome this opportunity to report on the progress of the abatement program on the Savannah River.

You will recall that the initial conference on February 2, 1965, was called by the Secretary of Health, Education and Welfare, Mr. Anthony Celebrezze. The Secretary's conference summary of April 1965 directed that a technical committee be established "to further evaluate the pollution situation and provide specific recommendations for remedial action;" and the conferees, advised by the technical committee, were to prepare within six months a schedule for construction and completion of sewage treatment works by all municipalities cited for contributing to pollution of the Lower Savannah River.

The Secretary also directed the conferees, advised by the technical committee, "to prepare a schedule

R. S. Howard, Jr.

for the construction of necessary treatment facilities by all industries discharging wastes into the Lower Savannah River system." The industries were required "to remove substantially all settleable solids and fibers and to provide adequate treatment for other industrial wastes."

The schedule for these programs was to be distributed to the conferees for their consideration within six months after issuance of the Secretary's summary. The conferees were to consult with the technical committee after consideration of the industrial waste treatment schedule and develop a plan of study, if necessary, to determine what treatment beyond reduction of settleable solids and fibers was needed. Following such studies the conferees were to prepare a timetable for construction of appropriate additional treatment facilities.

The technical committee, composed of Mr. W. T. Linton, Director, South Carolina Water Pollution Authority; Mr. Herbert H. Rogers, Regional Director, Region IV, U. S. Public Health Service, and the Executive Secretary of the Georgia Water Quality Control Board, made the report and recommendation to the Secretary of HEW and to you, Mr. Chairman, on September 14, 1955.

The technical committee's report which was revised on November 22, 1965, included the following recommendations:

1. Savannah, Savannah Beach, Garden City, Port Wentworth, Chatham City, and Travis Field were to provide adequate secondary treatment and disinfection of all municipal wastes by the end of 1970.

2. Savannah Beach, a resort town on Tybee Island, was required to carry out badly needed repairs to its existing sewerage facilities having only primary treatment and to provide disinfection of the plant effluent by the end of 1967.

3. All industries were to remove 90 percent of settleable and floatable solids and oils by the end of 1967. Under the same schedule, all industries were to reduce the BOD_5 of their wastewaters by at least 25 percent.

4. Studies to determine what additional industrial waste treatment would be needed were to be carried out as soon as possible.

In reference to the recommendations above, the technical committee stated "Requirements and schedules recommended above are considered minimal for abatement of the interstate pollution on the Lower Savannah River."

As you know, the technical committee's report and recommendations were never formally acknowledged or accepted. There were probably a number of reasons for this situation; a prominent one involved transition of the Federal water pollution control program from HEW to Interior.

At any rate, an abatement program was initiated immediately following the initial conference in accordance with the recommendation of Secretary Celebrezze which was: "I recommend that the Georgia Water Quality Control Board take appropriate action under its water pollution control program and State and local law to insure that the recommendations of the conferees are carried out." We have attempted to develop and implement an adequate and reasonable abatement program with the communities and industries cited by the U. S. Public Health Service and with a number of other polluters uncovered by the Division for Georgia Water Quality Control's surveys and investigations since 1965.

We will present detailed reports on the various individual programs completed and under way as well as evaluations of treatment plants in operation and an appraisal of the existing water quality on the Lower Savannah River, based on monitoring and surveillance data and special surveys. Before these reports are given, however, we would like to call on those communities and industries that have requested an opportunity to participate by oral or written statements.

Mr. Chairman, I would like at this time to pause there and ask for statements from some of the communities and some of the industries that have indicated their desire to participate in the conference.

Colonel Egbert has already made his statement. I would like now to introduce the Honorable Mayor J. Curtis Lewis, Jr., Mayor of Savannah, who would like to make a brief statement.

Mr. Mayor.

STATEMENT OF THE HONORABLE J. CURTIS LEWIS, JR., MAYOR, SAVANNAH, GEORGIA

MR. LEWIS: Thank you, Rock.

Mr. Chairman, Mr. Linton, Mr. Thoman: First of all, let me welcome you to Savannah and tell you that we are delighted that you have chosen to reconvene this conference, and I think it is a timely matter. I must say that not only the city government but all citizens in Savannah are vitally concerned with this problem of pollution abatement, and we at the outset would like to pledge our continuing cooperation to both the State and

Federal Governments in this respect.

City Manager Floyd has provided Mr. Howard with a current report concerning the status of our pollution abatement program. I think in the interest of time, Mr. Howard, if it is all right with you, sir, I would just like to enter this into the record. We have certain staff members of the city government here that can and will answer any questions that any of you gentlemen would like to pose later on in this conference. But in the interest of time, if it suits the chairman, I would like to introduce this and present it.

MR. STEIN: May I see that, please?

MR. LEWIS: I don't know if you have a copy of that or not.

MR. HOWARD: We have a copy of it.

MR. LEWIS: We have several members of the city government here, including elected officials as well as staff members, and there is one alderman that would like to be heard. Is Mr. Garfunkel here?

MR. GARFUNKEL: Yes.

MR. LEWIS: And also City Manager Floyd, and if it pleases the committee --

MR. HOWARD: I will call on them.

MR. LEWIS: -- we would like for you to call on them at the proper time.

MR. STEIN: You know what might be appropriate — and this isn't very long -- would be if one of your staff people could either read this or summarize this for the record, because I think this is one of the major things we are going to consider at the conference.

MR. LEWIS: All right, sir. With your permission, City Manager Floyd will be glad to do that.

MR. STEIN: .Thank you.

MR. HOWARD: This is City Manager Picot Floyd, Mr. Chairman, who will now give the report.

STATEMENT OF PICOT B. FLOYD, CITY MANAGER, SAVANNAH, GEORGIA

MR. FLOYD: Mr. Chairman, gentlemen, let me echo the words of the Mayor in welcoming you in recalling this conference.

At this time, I would like to read a letter, dated October 21, 1969, to:

Mr. R. S. Howard, Jr., Executive Secretary,
State Water Quality Control Board, 47 Trinity Avenue,
Atlanta, Georgia 30334

Re: Status of Savannah's Pollution Abatement

Picot B. Floyd

Program

Dear Mr. Howard:

In response to your letter of October 10, 1969, and Mayor Lewis' reply to you of October 17, 1969, a summary of the current status of Savannah's pollution abatement program, including that of Travis Field, is submitted in accordance with your request. It is understood that this information is required in connection with the reconvened Federal enforcement conference on the Lower Savannah River to be held in Savannah on October 29 and 30, 1969.

This program, which greatly exceeds in cost any previous single undertaking by the city, is moving ahead. Briefly stated, this program consists of separating storm and sanitary sewer flows from combined lines located throughout a large portion of Old Savannah, diverting the sanitary sewage to a planned new treatment plant and constructing this treatment plant in the northeast quadrant of the city near the Savannah River on the north side of President Street.

The initial engineering service contracts for design of the various portions of the storm separation projects were awarded during 1965 and the remainder of the engineering service contracts, including one for design of the new treatment plant, were awarded during the past year. An appreciable amount of the design work has been completed and other portions are now nearing completion. One storm separation construction contract for the Bacon Park drainage area is currently under way and it is planned to proceed with additional contracts as financial arrangements, including both local and Federal grant financing, can be arranged.

The new treatment plant site for a 20 million gallon per day plant has been cleared. Bids for site filling and grading were received October 15, 1969. These bids are now being analyzed. This plant will be sufficiently sized to conform to FWPCA and Superior Court requirements for pollution abatement in the Savannah area.

The project for constructing a new sewage treatment facility at Travis Field has been delayed due to the necessity for considering the possibility of a combined plant which would have served Travis Field and the adjoining municipalities of Port Wentworth and Garden City. These two municipalities definitely decided that they desired to construct their own plants, which then necessitated a third plant at Travis Field. Construction contract documents for the Travis Field facility are complete. By letter dated October 9, 1969, the State Water Quality Control Board transmitted to the city an "Offer of Federal Grant" in the amount of $62,850 under Public Law 660 to partially pay for the cost. This offer resulted from an application which was submitted by the city on January 24, 1967. This grant is being accepted with the understanding that the original application will be amended at the proper time for the purpose of formally requesting an updated grant which will amount to 33 percent of the eligible portions of the cost. The project is presently estimated to cost $293,000. It is expected that bids for construction will be taken within the next few weeks.

Savannah's complex pollution abatement program has been seriously questioned by various concerned citizens, thus justifying reviews of the total concept and actions to be taken. The financial problems relating to the total cost have not been fully solved. However, the Mayor and Aldermen are keenly aware of their responsibility in this matter and it can be expected that they will proceed to the best of their ability. In the meantime, engineering design work for the various line items included in the program is proceeding in accordance with detailed status reports which are being

Picot B. Floyd

submitted to the State Water Quality Control Board on a quarterly basis.

As an additional item, a summary entitled "Report of Chronological Events Relating to Savannah's Pollution Abatement Program" is attached.

Sincerely, Picot B. Floyd, City Manager."

MR. STEIN: We will have the chronological material appear in the record as if read without objection, if that is all right.

MR. FLOYD: Very well.

(The chronological material above referred to follows.)

REPORT OF
CHRONOLOGICAL EVENTS RELATING TO
SAVANNAH'S POLLUTION ABATEMENT PROGRAM

October 21, 1969

November 1964

The Public Health Service, U. S. Department of Health, Education and Welfare, produced a report entitled "Pollution of Interstate Waters of the Mouth of the Savannah River, Ga." This report indicated that the Savannah River in the vicinity of Savannah, Georgia was grossly polluted.

February 2, 1965

Federal enforcement officials conducted an interstate enforcement conference in Savannah, participated in by the states of Georgia and South Carolina. The City of Savannah was cited as the principal source of raw sewage discharged to the river from the standpoint of bacterial pollution, which was estimated to be approximately 80% of the total from all sources. A schedule was later established setting a time limit of December 1970 for eliminating this pollution.

February 25, 1965

The City of Savannah received a completed planning report entitled "Water Pollution Control, City of Savannah, Georgia" from the joint engineering firm of Wiedeman & Singleton-Hussey and Gay, which set forth a plan for abating pollution in the Savannah River. The City subsequently obtained about $1,500,000 from the 1965 water and sewer revenue bond issue to finance the initial portions of the pollution abatement program. Several engineering service contracts for detailed design were awarded during this same period.

May 19, 1967

A HUD grant totaling $363,300 to assist with financing the initial portion of the program was made available to the City in accordance with a previously filed application.

January 1968

A Federal grant in the amount of $1,200,000 under PL 660 to partially finance the initial portions of the program was made available to the City. In the meantime, a second application for a grant of $500,000 was requested from HUD and an additional grant of $973,000 was requested under PL 660. Approval of these grants is still pending until further progress has been made in implementation of the program.

January 12, 1968

The original program had been questioned by various sources, and in accordance with a previous City request, the State Water Quality Control Board presented a staff review of the original report and agreed with the basic method of eliminating pollution. An activated sludge type treatment plant was recommended in lieu of the previously recommended trickling filter type plant.

October 1968

The initial portions of a MPC Metropolitan Water and Sewer Plan for Chatham County was issued.

November 1968

Due to continued criticism and the resulting uncertainty in the minds of the Mayor and Aldermen, Engineering-Science, Inc. of Arcadia, California submitted a report to the City entitled "Review Study, Water Pollution Control Program, Savannah, Georgia." This report practically agreed with the original planning report and furnished additional information to be used as a basis for implementing pollution abatement.

November 15, 1968

A revised schedule for implementing Savannah's pollution abatement program was submitted to the Georgia State Water Quality Control Board by the City. This program conformed to the original Wiedeman & Singleton-Hussey & Gay planning report of February 1965 and gave consideration to the State's review of January 1968 and the Engineering-Science, Inc. review of November 1968. This schedule was approved and the remaining required engineering service contracts for preparation of contract documents were awarded by the City.

May 1969

A report entitled "Report on the Rate Structure for Water and Sewer Services Furnished by the City of Savannah, Georgia" was furnished the City by Robert & Company Associates of Atlanta, Georgia in accordance with a City request. This report sets forth a recommended new water and sewer rate schedule for financing a total pollution abatement program which will cost the City an estimated $14,000,000. This program includes abating pollution in the Savannah River and also pumping the Bacon Park treatment plant and the Wilshire Estates-Windsor Forest sewage effluent to the Savannah River.

February-July 1969

During this period the basic concept of evolving the most practicable scheme for handling the combined storm and sanitary sewage flow of the Kayton Canal and Paulsen Street areas was thoroughly explored. The City's consultant for the Kayton Canal area, Thomas & Hutton Engineering Company, conceived the idea of treating the combined storm and sanitary sewer flows without physical separation. This scheme had the tremendous advantage of eliminating the necessity for tearing up City streets and placing separate new sanitary and/or storm lines throughout the drainage areas. However, after several conferences and exchanges of correspondence, the State Water Quality Control Board's letter of July 22, 1969 advised the City that ".....the scheme proposed is not technically sound or economically superior to separation" and".....the FWPCA has advised that the project would not be eligible for participation in the PL 660 construction grant program. This would jeopardize or cancel out completely the $1,200,000 grant previously offered the City." In line with this decision, the City requested its consulting engineers by letter dated July 24, 1969 to expeditiously proceed with engineering design based on separation of storm and sanitary flows.

July 28 and 29, 1969

As a result of a suit filed by property owners living in Vernonburg and other points downstream from the Casey Canal, a formal hearing was held in Judge Dunbar Harrison's Superior Court to determine the facts relating to pollution of the recreational streams immediately south of Savannah. This proceeding lasted a full two days with various witnesses being examined and cross-examined. Subsequently, a Superior Court Order dated September 10, 1969, ordered the City of Savannah to eliminate pollution in the lower portions of the Casey Canal and in the Vernon River and that ".....such plan take full advantage of disposal facilities constructed pursuant to an order of the United States

Government regarding the abatement of pollution in the Savannah River basin so far as treatment and collection are concerned and that such plan be consistent with and utilize the facilities of all pollution abatement procedures in the City of Savannah, and, where possible, within Chatham County and (the defendents) are directed to correct such pollution and contamination no later than the completion of a master disposal plant." This total requirement creates a very difficult financial situation for the City which the Mayor and Aldermen are attempting to solve.

August 25, 1969

A construction contract was awarded for the project entitled "Bacon Park Collector System". This work is scheduled for completion by December 23, 1969. The purpose of this project, estimated to cost $83,900, is to separate storm and sanitary sewage in the Bacon Park drainage area and to eliminate a small amount of raw sewage entering the Casey Canal at Delesseps Avenue. The City is initially financing this project since a previously approved HUD grant in the amount of $363,300 will be paid to the City only after the other two projects involved in this HUD grant have been placed under contract and these are awaiting further progress being made on the new treatment plant. The contract document format and other HUD requirements are being met since a grant is involved.

October 9, 1969

By letter dated October 9, 1969, the State Water Quality Control Board transmitted to the City an "Offer of a Federal Grant" in the amount of $62,850 under the provisions of the Federal Water Pollution Control Act (PL 660) to partially pay for the cost of the planned new treatment plant at Travis Field. This offer resulted from an application which was submitted by the City on January 24, 1967. During a City Council meeting held October 17, 1969, the City Manager was authorized to accept this grant with the understanding that the original application will be amended at the proper time for the purpose of formally requesting an updated grant which will amount to 33% of the eligible portions of the project cost. It is now expected that bids for constructing this project, presently estimated to cost $293,000, will be received within the next few weeks. A supplemental grant application will be submitted at the proper time.

October 15, 1969

Construction bids were received for site filling and grading at the planned new treatment plant site on President Street. The specification had been written to encourage dredging contractors in addition to contractors who would haul the material to the site by truck from selected borrow pits. A low bid of $242,700 was submitted by Parkhill-Goodloe Company, Inc. of Jacksonville, Florida. This bid is being carefully studied since the quality and characteristics of the material to be furnished at the site will require supplemental drainage facilities prior to placement and will also require some special compaction procedures prior to actual plant construction.

October 17, 1969

The City Manager was authorized by City Council to have the City's consulting engineers, Wiedeman & Singleton-Hussey & Gay, proceed with the design of a 20,000,000 gallon per day sewage treatment plant on President Street, which conforms to both FWPCA and Superior Court requirements. Based on updated estimates, the cost of this project is as follows:

Construction (all phases)		$7,489,592
Engineering & Inspection @ 6%		449,000
	Sub-total	7,938,592
Minus Federal Grants @ 33%		2,620,000
	Estimated City cost	$5,318,592

The City portion of this cost is included in the $14,000,000 program set forth in the above-mentioned Robert & Company Associates report entitled "Report on the Rate Structure for Water and Sewer Services furnished by the City of Savannah, Georgia" prepared in May 1969. This design work will proceed concurrently with site preparation, which includes fill settlement required prior to final plant construction.

MR. STEIN: Are there any comments or questions?

I believe, Mr. Howard, you want to hold your comments until your presentation.

MR. HOWARD: Yes, we will have a presentation on Savannah's program by our Director of Domestic Wastes Section.

MR. STEIN: I would like to make one general comment in reading these, and you can withhold your answer until later or answer it now. But at least on its face, it seems that the delay, or as kids put it, "the hangup," seems to be an extraordinary long time spent in the development of plans and specifications for the project and the engaging of two engineers, and going over it and stretching this out.

I appreciate very much the attitude of the city administration, expressed by the Mayor's view, and recognize in large measure that you may have your own views and that you may have inherited a problem. But, just looking at this, I do think that we have had more time elapse on this than we have in comparable situations throughout the country.

MR. LEWIS: May I respond to that?

MR. STEIN: Surely.

Hon. J. C. Lewis, Jr.

MR. LEWIS: Regarding that time frame concerning the engineering, when this administration took office or shortly thereafter, litigation was in progress concerning the engineers that designed this plant. As I recall, another engineering firm was questioning the competency of this firm, and there were other legal matters involved. This matter, I think, was finally settled, and it involved, I think, some professional hearings with which Mr. Howard would be more familiar than I. But there is some doubt in the minds of reasonable men as to whether or not this program was in effect the proper program for Savannah.

We then engaged an outfit on the West Coast (Engineering Science, Inc., I believe the name of the company was) and they made a survey and made recommendations which finally turned out to be pretty much in accord with the original suggestion.

So with this affirmation of the original plans with certain upgraded data on engineering improvements and advancements during that period, the aldermen felt that we could logically proceed with the program.

But, from an engineering standpoint, there was a period of time when there was some doubt as to the authenticity or the competency of those involved, but this was cleared up, sir.

MR. STEIN: Right. Are there any other comments or questions?

If not, thank you very much.

Let me ask you one question: At your present operation, when do you expect to be in operation with your system? What is your date of operation?

MR. FLOYD: I think it would be appropriate for the specific details of technical questions to call upon Mr. Earl Dobbins, who is the city's water and sewer engineer, who can respond to that question.

Mr. Dobbins is in the audience here, sir.

MR. STEIN: I wonder if Mr. Dobbins can come up? Could you come up to the lectern?

For the record, I would like to see if you can give us dates -- just dates -- for operation. One, do I assume that this plant will be a secondary treatment plant? Am I correct on that?

MR. HOWARD: Right.

MR. STEIN: With chlorination. And you are going to have year-round chlorination --

MR. HOWARD: Right.

MR. STEIN: -- or disinfection of the effluent.

I wonder if we could have several dates: One, whether you feel the preliminary plans and specifications have been completed; two, when the final plans and specifications have been completed if these dates have taken place, give us those; thirdly, when the completion of financial arrangements will be made; fourth, when the contracts will be let; and, fifth, when the plant will be in operation.

Could we have those?

MR. DOBBINS: I would appreciate your backing up and asking those one at a time, and I will try to answer them that way.

MR. STEIN: I should have done that. I wanted to give you the complete picture because I didn't want you to think I was leading.

One, preliminary plans and specifications.

MR. DOBBINS: We have actually preliminary plans as they relate to the general layout of the plant itself. What we propose to construct is a 20 million gallon per day activated sludge plant with mechanical dewatering of sludge and subsequent incineration, and of course we do intend to chlorinate the liquid effluent prior to emptying into the river.

MR. STEIN: So the preliminary plans are completed.

MR. DOBBINS: That is correct.

MR. STEIN: Yes.

MR. DOBBINS: Let me answer that in this way, sir: The concept that we will use for the detailed design is well in hand and it is merely now a matter of proceeding with the detailed design, and our consulting engineer, Wiedeman & Singleton, jointly are working with Hussey & Gay, a local firm who have been authorized to do that.

MR. STEIN: Do you know, or do you have a date for the completion of final plans and specifications?

MR. DOBBINS: It will take about a year from now for that, and I might add, in connection with this, that that is not going to result in a delay of starting construction of the actual plant at the site simply because the site itself is a low marshy area which we recently took bids on to place select fill. We are now in the process, as indicated by the City Manager, of analyzing those bids. We hope to award that contract real soon. However, our consulting engineer, regarding the soil's condition -- Law Engineering of Atlanta -- have told us that it will take about a year.

Shall I proceed?

MR. STEIN: Yes, go ahead.

MR. DOBBINS: All right, sir. Law Engineering have told us it will take about a year with surcharge on top of this material to get the required settlement prior to construction. So what we have planned to do is place this fill just as quickly as we can, get the required settlement within this one-year period and concurrently with that complete design of the plant.

MR. STEIN: Right. Now, how about your financial arrangements? What are your plans for that?

MR. DOBBINS: I think that probably there -- that is a little above my level so far as the details are concerned.

MR. STEIN: No, just the date. When do you expect to have it?

MR. DOBBINS: I don't know exactly when all those arrangements will be made, sir.

MR. STEIN: All right. Now, when do you expect to let the contract?

MR. DOBBINS: The contract for what?

MR. STEIN: For the construction of the plant.

MR. DOBBINS: We expect to do that roughly a year or so from now; possibly 15 months, depending on whether or not we have any problems placing this fill and getting the required settlement.

MR. STEIN: Now, remember, if you are going to place the contract from a year to 15 months from now and have your final plans approved, you are also going to have to have your financing arrangements. At least I have never heard a city let a contract without arranging its financing first.

So we would have to assume that you are going to have to have your financing arranged in about a year, too. Is this correct? If I am wrong in this assumption, I would like to hear this.

MR. FLOYD: Mr. Stein, I think Mr. Dobbins is quite correct in stating that you were asking him a question that is outside of his scope. I think that perhaps there are two aldermen here, one or more of whom might care to speak. I know that Alderman Garfunkel is here and has indicated an interest in speaking to this specific point, sir.

MR. STEIN: All right.

MR. HOWARD: I have Mr. Garfunkel down to make a talk or speech or whatever he wants to do pretty soon.

MR. STEIN: Right.

Now, I would like to make one comment, and if you want to, any of you people can strike this off the record here.

We do know that in dealing with waste treatment facilities, we usually take advantage of gravity when we locate them on the rivers and not have them on river bottoms or swampy areas, etc. to deal with fill. We do know sometimes throughout the country we have had problems as to where to put a waste treatment plant because of the obvious nature of the site selection. Sometimes we have foundation trouble and cracking trouble, and pipes breaking off from plants.

In all cases, it is the better part of valor, when you are doing this and have a situation like that to recognize it. I certainly believe, on our part, we will be very sympathetic with you in getting that foundation analysis lined up, because we don't want a false start or a start that isn't going to work.

Now, if you let the contract in 15 months, how long do you think it will take that plant to be constructed?

MR. DOBBINS: I would say about 2 years, and one reason it takes longer these days -- I am sure you gentlemen recognize it -- is that delivery of material, mechanical equipment, pumps, electric gear, and that sort of thing, is terrifically slow.

I can give you one example. We, right now, are trying to rebuild two of our lift stations here, and it is taking 4 to 5 months to get the required pumps and electrical gear to actually do a little job like that. So it takes much longer than it would possibly under normal conditions.

MR. STEIN: I appreciate that, and this is a problem that is indigenous to the entire country and not only to water pollution control.

MR. DOBBINS: Yes, sir.

MR. STEIN: It is a variety of things.

I always ask when people fuss about this: how many of you bought a house or moved in on time when you were supposed to move? And it is the same thing in this business.

But, as I take it, if financing is arranged, the program that you have outlined indicates that in 3-1/2 years or about 3-1/2 years, you will be ready to start operation. Is that a fair statement on the basis of what you have said?

MR. DOBBINS: I would say so, sir.

MR. STEIN: Right.

Are there any further questions? If not, thank you very much, sir.

MR. DOBBINS: Yes, sir.

MR. HOWARD: Mr. Chairman, I would like to ask

Mayor-pro-tem Garfunkel to come forward. He would like to make a statement.

STATEMENT OF BENJAMIN M. GARFUNKEL, MAYOR-PRO-TEM, SAVANNAH, GEORGIA

MR. GARFUNKEL: Mr. Stein, and gentlemen of the conference. I, first of all, would like to say that if I get excited or become incited or become aroused in some of my remarks that I have the highest regard for the integrity of all of the fine conferees. I have had many pleasant discussions with them. If I am referring to any of them I am referring to their position not to the individual.

I am probably more concerned and more related with this as an individual than most of the other members of the city government because I, as an individual, having been led or misled, made a motion that the people of the city of Savannah and Chatham County be burdened with financing the responsibility of the State of Georgia and the Federal Government. I am thankful that my motion did not carry. I did it because I thought it was the proper thing and the right thing to do, and I agree with you that you cannot implement a program without agreeing to pay for it or knowing how you are going to pay for it.

I am real concerned over the fact that the city of Savannah, I think, has shown more than good faith in what has to be done in the programs that it has implemented, and I think that the city of Savannah of the three, considering the Federal Government, the State of Georgia, and the city of Savannah, that the only one that can appear today with clean hands is the city of Savannah. In spite of the accusations that came from the Federal Government and from the State, the city of Savannah is prepared and is ready to implement that program and pay their fair share.

We even went so far -- as I say, I made a motion that we take care of the fair share of the State of Georgia and the Federal Government. I know that on numerous occasions, Mr. Howard has appeared before committees of the legislature and the Governor and others to try to get the State of Georgia to fund their program.

Now, about the remark that you just made about who is going to pay for it or how you are going to pay for it: This is right where we are with the State of Georgia and the Federal Government. They are telling us what to do and how to do it, and what share they are going to pay of this. But they do not put up the money and they have come to the point now -- and I appreciate the position that you gentlemen occupy, and it is your job to see that the program is implemented and that you do not handle the funding of it -- but without the funding of it, just as you said, how can the program be implemented?

Now, the city has gone along and advanced funds from some of their other bonding capacities, and other operating funds, to pay for the cost of the engineering studies, the surveys. We have implemented and at this time are going along with a contract that is separating some of the lines on which the Federal Government has agreed to give the city a certain portion of the cost of that work -- maybe in round figures $1 million -- and the Federal Government comes along and says, "Yes, we are going to give you the $1 million, and we have earmarked and put the $1 million to one side."

But you people say we can have an extra million dollars now, and when you get your plant built, then we are going to give you the money. Well, I don't think that is cooperation. I realize you have rules that you have to operate by, but your Government is my Government, and I think that the city is entitled to their money as they are implementing those portions of that program. I think that possibly regulations perhaps should be corrected because then the city would have additional funds to move further along with the program.

Now, I have completely reversed my position and my feeling that the city of Savannah should pay for the cost of the State of Georgia and the Federal Government in this program. I for one as an individual will fight any program of the city to pass funds to pay the share of the Federal Government and the State of Georgia. I will be the first to get up and vote for funds when the Federal Government funds their portion of it, and when the State of Georgia funds their portion of it.

I received a memorandum I think within the last 2 or 3 days from the National League of Cities that the program lost by two or three votes, I think, in the House of Representatives, to increase the funding for pollution from $600 million to $1 billion this year. They hope that the $600 million will remain as against the maybe $250 million that was allocated last year for pollution.

Now, the same thing is true with many of the Federal programs, and I think that the timing of all of this has got to tie in with the funding of all of this. And the city of Savannah is ready and willing to go along.

We are slaughtering hundreds of thousands of people on the highways of the United States today, and the Federal Government came in with a program to build expressways and interstates, and it was to be completed by 1972. That program is now into 1977 or 1978, solely because of the funding and the Vietnam situation.

The city of Savannah is the only one that can stand up today and say, "Yes, we are ready and willing to go ahead and to pay our part of it." I would ask that you gentlemen continue to use your efforts and to give consideration to the program of the city of Savannah because of the lack of funding that is coming from the State and the Federal Government.

Thank you, sir.

MR. STEIN: Thank you.

Mr. Garfunkel, while you are there, let me at least make a few comments. I don't know if I am going to correct anything or not. But I personally am for financing. As you know, some people have called me a benign enforcer because if we ever issue a directive or an order against someone, we try to get you as much money as is available.

But, on your first point, on the information regarding the action in Congress, most people consider that a tremendous advance in this year's budget; $214 million were asked for. There was a move in the House to increase it to $1 billion. The vote came up, and the vote passed to increase it to $600 million.

Now, this is a threefold increase, and most people think this is a tremendous thing. It has to go to the Senate. Maybe the Senate will raise it again, I don't know. However, the group that wanted to not only increase it to $600 million but increase it to $1 billion just lost by two votes.

Now, this didn't mean that there were two votes to push something down. What this was, was something that is very rare in the halls of the Congress -- that after the Appropriations Committee reports a bill out, that there is action on the Floor which results in a threefold increase. So I think the indications are that there is a very strong sentiment to get more funds available, and most people regard this as an unusual victory for the people who want more Federal funds rather than a defeat.

It almost was overwhelming when they got up to the bill, but they got up to $600 million which was something that is almost unheard of.

Now, the next point you made -- and this may not be so encouraging -- but speaking for our Federal people in Atlanta and possibly for Mr. Howard, 1) we are not authorized to give money just to build sewers; our job is to clean up waters. As a matter of

B. M. Garfunkel

fact, the more sewers you build, the more you are going to have waters polluted because if you have the septic tanks it doesn't really get to the river, in that sense. So unless there is a treatment plant at the end of it, we can't give money to build these sewers, now matter how much we may desire this.

Now, if someone doesn't like this, I would suggest really that the proper forum is the Congress who passed the law, not to us who have to carry out the law as it is passed.

Now, the next point about the State or the Federal share: Unfortunately -- and again I appreciate your position -- but when you talk in terms of Federal share or State share, these funds are only made available by the Congress or the State legislature, and goodness knows you people have representation in those bodies as well as anyone else. But the law on this is very plain, I think, both in the State and the Federal law, and that is: those who are creating this pollution are responsible for its cleanup, whether it is a city or industry, State, or Federal Government. We talked to the Corps of Engineers and we recognized that as a responsibility of the Federal Government. But when you are talking about the city of Savannah, the State of Georgia isn't creating this pollution; the Federal Government isn't creating this pollution; the city is creating this pollution. If the city is creating it, under the law, they are responsible for its cleanup.

Again, this has been the law that we have always had in this country. This is the law of the State, the law of the Federal Government. Mr. Howard, Mr. Thoman, Mr. Linton, myself -- we have taken an oath to uphold the law, and we must come in and try to enforce the law as we find it and as it is written.

MR. GARFUNKEL: Mr. Stein, I appreciate that, and as I told you I appreciate the position that you gentlemen occupy. But I, as an individual, have had enough of the harrassment that I, as an individual, am going to be taken into court. I think that we are almost to the position of the father that keeps going for the belt for the little boy. Well, I have finally been hit with the belt, and that doesn't have any fear for me any more. I think the courts may give us justice, and I think that having to implement a law as you see it without considering the financial aspect of it does not give the justice that the court might give. I have no fear of the court action because I believe that that might bring it to a head and bring about a working together so we might all resolve the problem.

I know this: that the law, as I understand it -- we would require some $14 million to clear up the problem of the city of Savannah. The law, as it reads says that the Federal Government could pay as much as 55 percent of that cost; the State of Georgia could pay 25 percent of that cost; which would be 80 percent; and the people of Savannah would then have to pay 20 percent of that cost.

Now, to ask the people of Savannah to pay almost a hundred percent of that cost at this time, or 70 percent of that cost, at this time, and to carry that burden for the Federal Government is just not right. The law should be changed and something should bring that change that is necessary to the eyes of those that pass the law.

The same thing is true in regard to what you tell me about the law that you have to impose, and what you have to carry out, as you see it. But the people that are funding it, that passed that law, normally are the same people that should be funding it. If they can't see that they have to do the two together, then I think they should go back and readjust their requirements they passed when they obligated themselves to pay some of this, or eventually to fund some of it.

MR. STEIN: Mr. Garfunkel, it is such an important point I am going to take another minute or two not to change anyone's mind on this, but let me indicate to you there are two things both in the Federal and the State law: one, there is an authorization; and, second, an appropriation. If you get the authorization, there is no sense of obligation.

The way I put it: All you have is a hunting license -- a hunting license to get money.

I think if you were to add up all of the authorizations that the Congress has made in its history, and if we had that kind of an appropriation to satisfy them all, you might as a taxpayer be appalled. We obviously have never, never done that. Until that money is appropriated, it just is not available.

Now, again, even with the $600 million, or even with $1 billion, and dealing with the allocation we have among the 50 States and the other jurisdictions, there isn't that much money for each one.

Now, we have in recognition of this -- certain cities, for example -- you take a plant in New York City that they are putting up on Manhattan that is going to cost $220 million. That is more than our total appropriation for last year. Obviously they can't expect a very big grant even if all of the money were available.

B. M. Garfunkel

Cleveland has just appropriated $100 million. These cities have recognized that this problem is so important that they are going ahead with their own financing or pre-financing. Even the frugal New Englanders -- and we just came back from there -- are doing this.

Now, when you point this out to the court -- and I just want to point this out, because this is part of my job and I handle this, too -- the question is: Can we afford not to do it? And can we look at where the responsibility lies? On the other side of the coin is the fact that Mr. Howard and I and the State people and Mr. Linton were here in 1965. It is now 1969 -- the end of 1969, or toward the end, getting toward 1970 -- and our forebearance, I think, just goes so far.

When you look at the equities of this case, I think we have to recognize we all have a problem. I would say let us take the tools that are available to us, let us not battle each other but try to work out the best possible program and work forward to it, and recognize too that I for one am very sympathetic with your problem and the point of view you express.

MR. GARFUNKEL: I think the point I am trying to make is that I think the city of Savannah has gone further than the others in that we have passed the laws; we have implemented part of the program and we are to the point where we could fund our share of it even though we might not be able to fund the other share at this time, and that frankly is the problem. I think 99 out of 100 problems in the world could be solved with money, and there is not enough to go around, but everybody acknowledges and realizes that.

But we are working and I think that what we are doing should be given some consideration. Thank you.

MR. HOWARD: Mr. Chairman, I would like to speak to that point after a break, but I suggest we have a coffee break now.

MR. STEIN: That is a wonderful suggestion, Mr. Howard. You are right as always.

We will stand recessed for 10 minutes.

(Short recess.)

MR. STEIN: Let's reconvene after enjoying that marvelous Georgia hospitality.

I know around here you have Fort Pulaski, and you know I was reminded when I looked at it of the role of the Poles within our history in the early times. I come originally from Brooklyn, and they have a lot of Poles there. I guess we had a sidekick of Pulaski named Kosciusko, who used to be up there, and there was a story we used to tell when I was a kid -- this will give you an idea how long ago I was a kid -- but a horse died on Kosciusko Street. The cop came up and started to write out his report; pulled out his book; got out a stub of a pencil and started to write.

Then he said, "Oh, the heck with it." Put the book and the pencil back into his pocket, and pulled the horse around the corner to Myrtle Avenue.

Mr. Howard.

MR. HOWARD: Well, Mr. Chairman, I would just like to make a few remarks about what has been said so far about Savannah's program, specifically by Mr. Garfunkel.

We are not blaming the present administration for the problems that we have on the Savannah River. They inherited those problems like so many other mayors.

We think that, like you mentioned a while ago, all of these complaints about funds should be addressed to the Georgia legislators and to the Congress. I have asked many people to write to their Congressmen, to talk to their legislators, and I feel very strongly that the State of Georgia should provide construction grants -- substantial construction grants in the same way that they are providing aid to education and to highways, and so forth.

As far as the State of Georgia asking Savannah people to clean up, it is their problem. We are not asking them to clean up Atlanta's problem. Atlanta has a $41 million program under way, the central city, and we will probably ask for a conference on the Chattahoochee after this one to review what progress we have made on the Chattahochee, but the Atlanta area has a $70 million program under way, so it costs a lot of money.

But for generations, as in the case of Savannah, where the cities are the metropolitan area has polluted the river and now they have got to pay for it.

I know we are not going to solve the problem with poetry or slogans, it is going to take money, hard work and sacrifice. But I can tell you of a lot of priorities that these towns in Georgia have honored and have completely ignored the pollution problem. They go ahead and have bond issues to build a Confederate monument -- something like that -- and forget all about the problem of pollution.

Now, I haven't turned loose on these State legislators. I think they are guilty of saying they are in favor of motherhood and against sin, but they haven't put up any money, and I am hoping very strongly that they will do something like that, but we don't indict Mayor Curtis Lewis or Mayor-pro-tem Garfunkel or anybody else for this problem.

It is like in the case of Lake Erie, they said, "Who killed Lake Erie?" The answer is: "We did." Now we have got to clean it up.

We have a couple more gentlemen that we would like to call on to talk at this time.

Alderman W. T. Gaudry of Savanna, would you like to say something?

Mr. Gaudry.

STATEMENT OF W. T. GAUDRY, ALDERMAN,
CITY OF SAVANNAH, GEORGIA

MR. GAUDRY: Mr. Stein, Mr. Howard, Mr. Thoman, Mr. Linton: I am usually rougher than Mr. Garfunkel, but I have met with Mr. Howard on other occasions and I have worked with this pollution abatement problem for several years now and I am real disappointed this morning not to see our State legislators here -- particularly from this coastal area — because they are the ones that we are going to have to put the monkey on their back in order to get the 80 percent participation Mr. Garfunkel talked about.

W. T. Gaudry

It will be necessary that our State legislature either appropriate funds or take some of the funds that the cities presently get and call this fund for pollution abatement; thereby we would qualify for more Federal funds.

The main problem -- and we took this up with Mr. Howard before -- in my eyes is the fact that we are not cleaning up our recreational streams. We can clean the Savannah River with the program as outlined several years ago, but we have been charged by the court not only to clean the Savannah River but the Vernon River and all of our salt water streams -- the streams used for recreation. As I testified during those hearings, in my estimation, that was more important than cleaning up the Savannah River which will be and has been an industrial stream. But it appears that we will have to clean them all. In order to clean them all, we have got to have some help at the State level, and I appeal to this conference, to the individuals attending here, both from industry and from other municipalities, that we put the pressure on our State legislators to fund the State's share of this program so we can in honesty go before the people and say, "Look, we are getting all of the help we can."

This is a serious problem, and let's work on it with unity. Thank you.

MR. STEIN: Thank you.

Any comments or questions?

MR. HOWARD: One more thing I would like to say. Mr. Garfunkel stated that he could not get the Federal funds until the project was 100 percent complete. This is not right. Actually when the project is 50 percent complete, then he can request State funds, Federal funds, and then he will get them.

I would like now to ask if Mr. Doremus is here, Mr. Ogden Doremus. He had put his name down on the list, I see, saying he would like to make a statement.

Is there anyone else here who would like to speak on the problem of Savannah -- the city of Savannah's pollution problem?

If not, I would like to call on Mr. James R. Lientz, Vice-President of Union Camp Corporation.

Mr. Lientz.

STATEMENT OF JAMES R. LIENTZ, VICE-PRESIDENT, UNION CAMP CORPORATION, SAVANNAH, GEORGIA

MR. LIENTZ: Mr. Chairman, and members of the

James R. Lientz

conference, my name is James R. Lientz, and I am Vice-President of the Union Camp Corporation and Resident Manager of the Savannah plant. This is now the name of the company which was called the Union Bag-Camp Paper Corporation at the time of the 1965 conference.

The Savannah plant of Union Camp, which produces pulp, paper, linerboard, bags, corrugated shipping containers and chemicals, is the largest operation of its kind in the world. The magnitude of these activities, and the large contributions the plant makes to the economies of both Georgia and South Carolina were reviewed in my statement at the 1965 conference and will not be repeated here. I will use the time available to report on the very substantial steps which Union Camp has taken since 1965 to reduce and improve our discharges into the Savannah River.

The Technical Committee established by the February 2, 1965, Conference on the Savannah River studied the problems of the river in depth. A report was issued on September 14, 1965, and revised on November 22. In keeping with the recommendations in this report, Mr. R. S. Howard, Executive Secretary of the Georgia Water Quality Control Board, wrote Union Camp on December 16, 1965, requiring that we carry out an abatement program.

James B. Lientz

Specifically, we were required to remove 90 percent of the settleable solids from our effluent; remove 90 percent of the floating solids from our effluent; remove 90 percent of the oils from our effluent; and reduce the BOD of our discharge by 25 percent.

Later we were also told to separate all sanitary sewage from our plant sewers and to provide both primary and secondary treatment of this waste before discharge.

The first four requirements were on a time schedule calling for completion by the end of 1967. The sanitary sewage system was to be completed by the time the city of Savannah began operation of its municipal sewage treatment plant.

To comply with these requests, Union Camp started engineering studies immediately. After several conferences with Mr. Howard and his staff, and the submission of engineering reports, we were granted a construction permit on January 10, 1967. This permit covered work to remove or reduce settleable solids, floating solids, oils and BOD, but did not include sanitary sewage separation.

We have now completed the first construction program at a cost of $3,375,000. The sanitary sewage project will cost another $825,000, which will bring our total capital expenditures for the construction of new facilities to $4.2 million. When the sanitary sewage system is added the combined cost of operating the two systems will be about $190,000 each year.

Our present operating system includes a collection network, sumps, screens, pump stations, a 310-foot diameter clarifier, sludge thickening equipment, two oil-skimming clarifiers, meters, sample stations, provisions for burning the solids removed, and other auxiliary equipment.

Unanticipated construction problems kept us from meeting the very tight time schedule and it was the middle of 1968 before all parts of the system were operating. During the next several months there were some interruptions in treatment because of initial operating difficulties.

I would like, at this time, to show some slides of the construction and the equipment that we have.

I mentioned the operating difficulties. I would like to just run through some of the construction that we had. (Slides follow page 72.)

... Slide ...

This is the clearing of the area, and the moving of muck from a 31-foot diameter clarifier area. We moved 45 hundred truckloads of material out of this area.

... Slide ...

This shows a beginning phase of construction;

mostly just the opening up of the area where the clarifier will be.

... Slide ...

This is the clarifier base after moving out 4,500 truckoads of muck. We put in 3,500 truckloads of fill in the area.

... Slide ...

The clarifier itself is concrete structure. It is about 18 feet deep in the middle and about 14 at the sides, as I recall; pre-stressed concrete walls with a rake arrangement to concentrate the solids.

... Slide ...

This is another view of the construction program showing the ridge and the rig mechanism.

... Slide ...

I might mention that one of the operating problems referred to after the startup was that these rakes completely folded up and had to be rebuilt.

... Slide ...

This is another shot of the clarifier toward the end of the construction period.

... Slide ...

Another similar shot.

... Slide ...

James R. Lientz

This is the beginning of our collection system. This happens to be a system which is in the paper mill end of our operations. We collect and pump to the clarifier 12 million gallons a day of effluent from this point.

... Slide ...

Another collection station which collects 19 million gallons a day.

... Slide ...

Another one -- and this happens to be a two-stage collection in that we separate sand which comes in with our raw materials before we deliver about two million gallons a day from this point to our clarifier, and we recover at this point about two tons of sand a day.

... Slide ...

This is the collection header which takes all of the effluent from our plant into the clarifier system.

I might back up a minute to point out that this is a retaining area here which is sheet piles and is really not part of the river area.

... Slide ...

This is an aerial view of the clarifier as it is currently in operation. This was taken last week.

... Slide ...

Another shot of the 310-foot diameter clarifier in operation. You get an idea of the appearance of the river around the clarifier.

... Slide ...

Similar shot from a different point looking up the river.

... Slide ...

It is necessary to sample the sludge and determine the level of the sludge in the clarifier, and this is our sample team in the clarifier itself. It gives you an idea of the size of the clarifier.

... Slide ...

This is the inlet flow to the clarifier which is the 33 million gallon a day flow handled in this unit.

... Slide ...

This is the outfall from the clarifier. You will get an idea of the appearance of the outfall after it has been settled and clarified.

... Slide ...

Another view of the effluent as it leaves the system and ultimately reaches the river.

... Slide ...

This is the collection area, skimming area. We have a small amount of floating material which is skimmed off and disposed of as a part of the clarifier operation.

... Slide ...

The underflow from the clarifier, which amounts to about 38 tons a day, is pumped through these pumps.

... Slide ...

And incidentally I will show you where it goes in a minute, but this is the control system for the whole effluent operation right here.

... Slide ...

This is the centrifuge system which dewaters and thickens the underflow of fibrous and sandy and extraneous materials from the underflow of the clarifier.

... Slide ...

This is a difficult shot to see, but this is ths sludge from the clarifier after it has been pumped out and thickened. This is mixed with bark and is burned in our power boiler at our plant, so that disposal of this is internal and it is completely handled in our operation.

... Slide ...

This gives you an idea of the material which is settled and thickened, and this is the material as it is put into the conveyor that you just saw.

... Slide ...

James R. Lientz

This is the oil clarifier I referred to. This is a 30-foot diamater clarifier. We have two of these in operation, and this material right here is skimmed off and returned to the process for further treatment.

We are now pleased to report that for the six-month period ending September 30, the treatment facilities have performed in most respects as expected. For the past six months we have removed 91 percent of the settleable solids; removed essentially all of the floating solids; removed essentially all of the oils; reduced BOD by 21 percent, and since September 1, we have averaged 27 percent reduction.

The installation of all equipment needed to comply fully with the Georgia Water Quality Control Board's directions has been completed. We have met Board requirements for settleable solids, floating solids, and oils for some time, and are now meeting our established goal for BOD reduction. We are still working to improve our efficiency in equipment operation so we can continue to meet this goal regularly.

The reduction of BOD by 25 percent has proved to be unexpectedly difficult. Based on the reported experience of others with similar equipment, it was projected that the solids removal operation of the clarifier would reduce the BOD load by over 10 percent. Internal process changes were designed to achieve the remaining 15 percent reduction. These design bases were detailed in our engineering report to the Georgia Water Quality Control Board.

Our internal changes have been very successful. We have actually averaged 17 percent reduction from these. However, we have not realized the expected BOD benefits from the clarifier operation. For the past six months we have averaged only four percent reduction and at times there has been no reduction at all. When we learned this we began to search for other ways to change our mill equipment and operation to achieve even more reduction internally. This was accomplished and we expect that continuing efforts will enable us to stay within limits consistently. It is encouraging that we have fully met our goals for BOD reduction since the first of September.

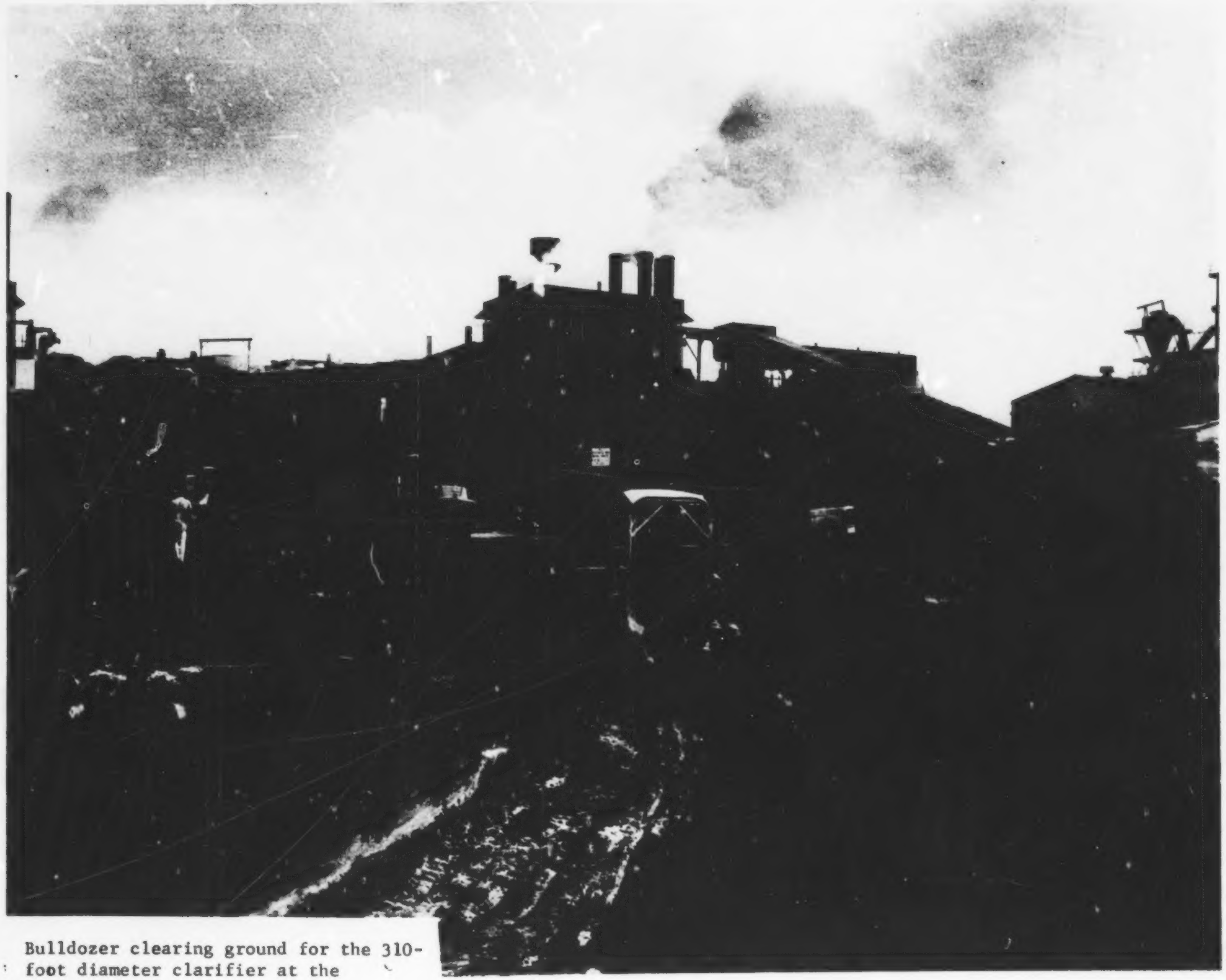
In addition to the systems I have just described, we shall go ahead with the sanitary sewage separation and treatment project to meet our commitments to the Georgia Water Quality Control Board by the time the city of Savannah begins operation of its treatment plant.

We expect to reach an agreement with the city by which we will pay it to treat our relatively small quantity of sanitary sewage in its new plant. As yet the city has not been ready to discuss specific details, so we have not reached a final decision as to exactly where the sanitary waste will be treated. We have done preliminary engineering and will move promptly as soon as the city's time schedule and rate structure are available to us.

To summarize the waste reduction activities in our Savannah plant, Union Camp has had and continues to have a vigorous program in force to reduce its discharges to the Savannah River. We have already spent well over $3 million on treatment facilities, and will spend the major part of another million to meet our commitment for the sanitary sewage system. In addition we will spend $190,000 each year to keep these systems operating. After some construction delays and initial operating problems, our industrial waste treatment systems are now working effectively and we expect further improvements as we gain operating experience. We have, as a result of extensive efforts, substantially reduced our discharge of undesirable materials to the river. This should certainly have contributed to improved river conditions.

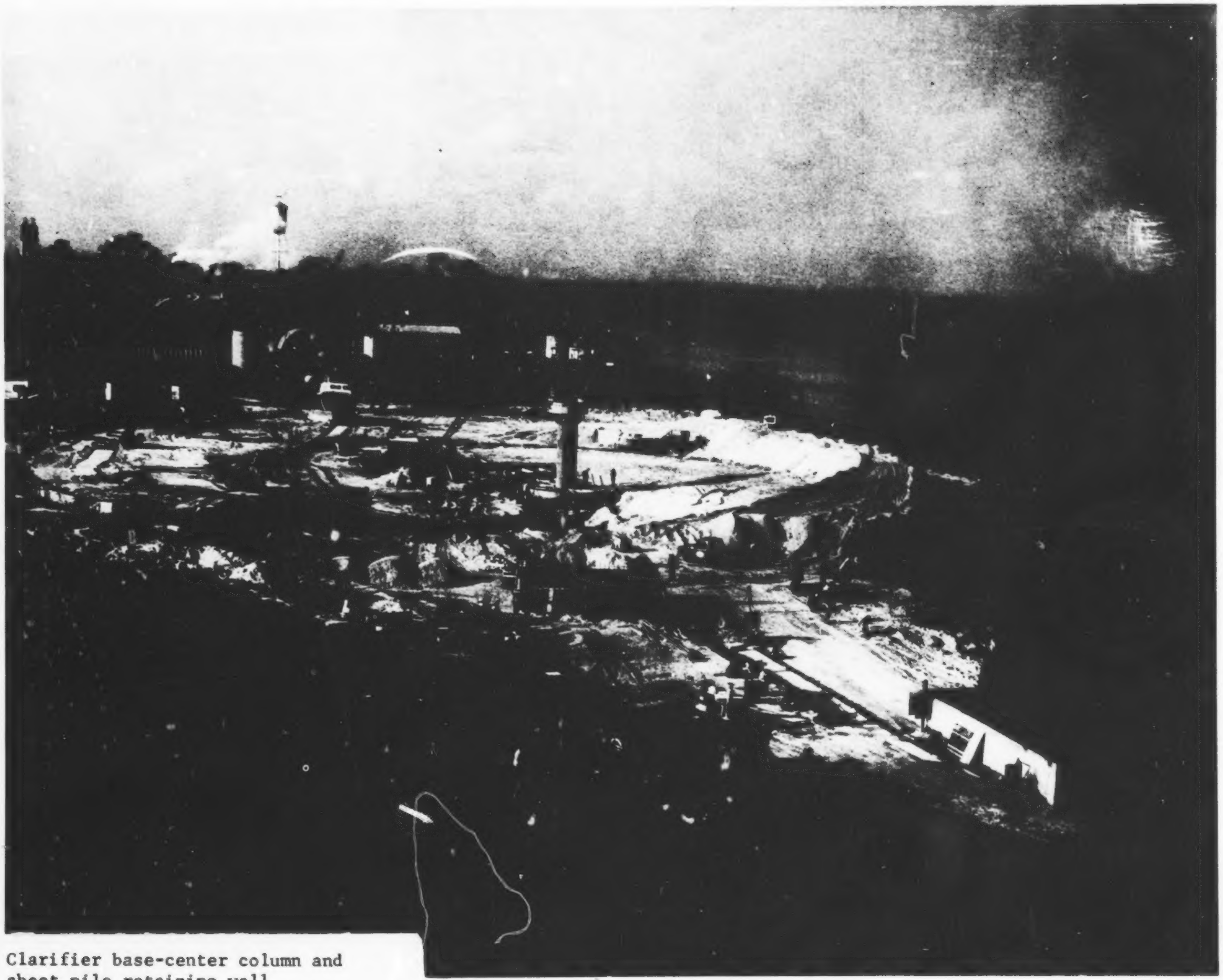
MR. STEIN: Thank you, sir.

Are there any comments or questions?



Bulldozer clearing ground for the 310-foot diameter clarifier at the Savannah Mill.

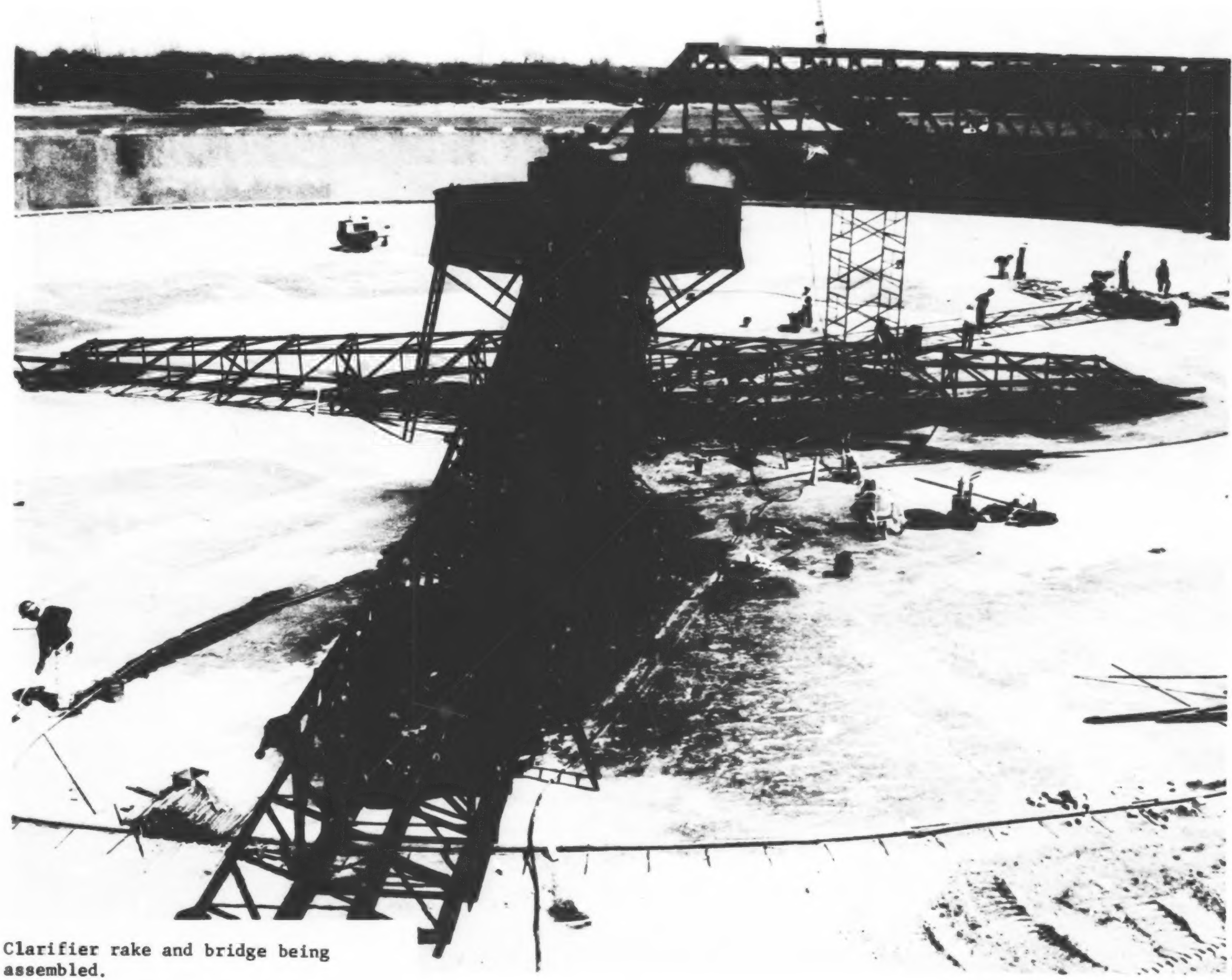
Beginning phase of construction.
Opening up area where clarifier will be.



Clarifier base-center column and sheet pile retaining wall.

Clarifier wall, rake, -and bridge
under construction

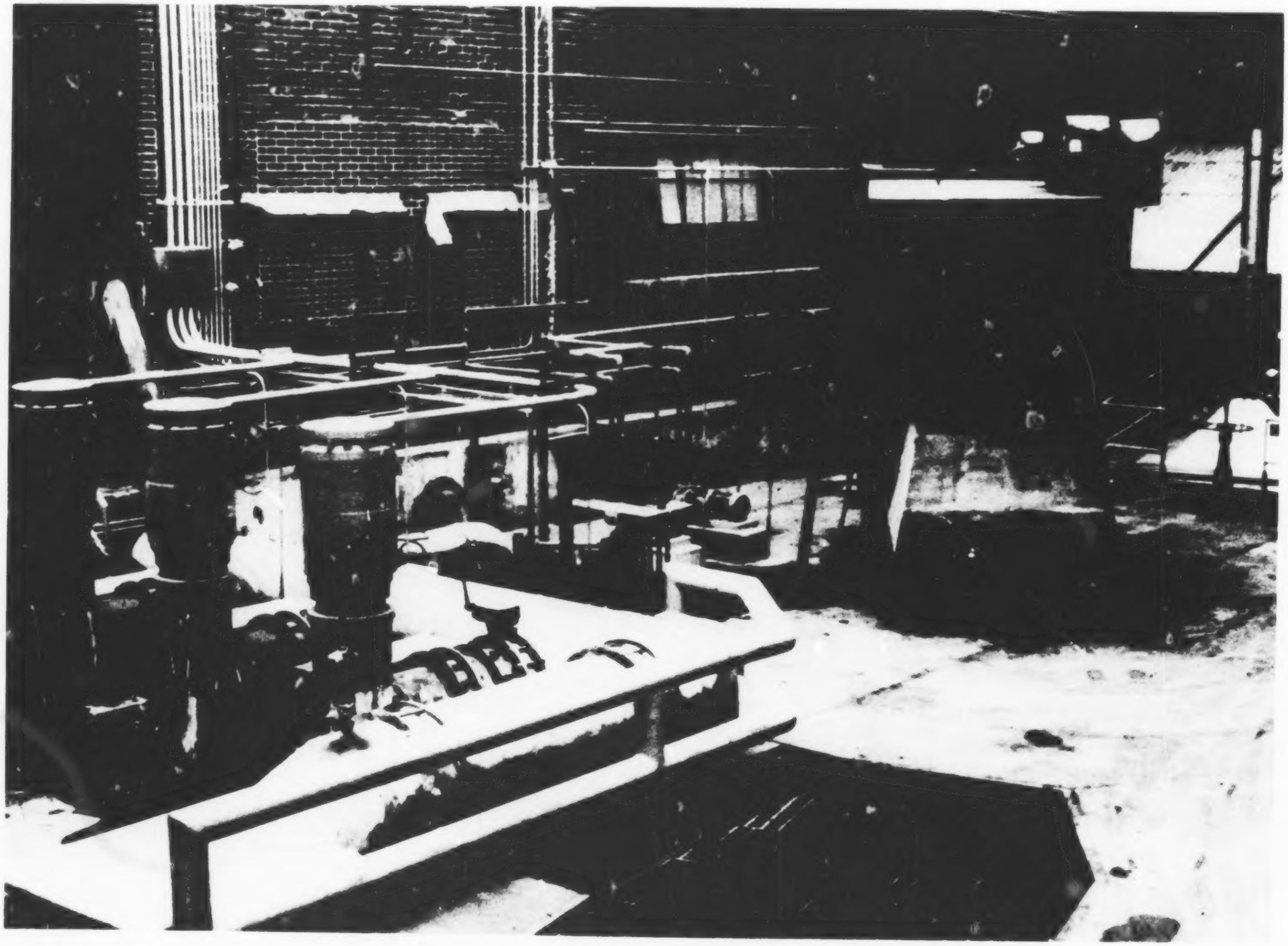
Pre-stressed concrete wall construction continues.



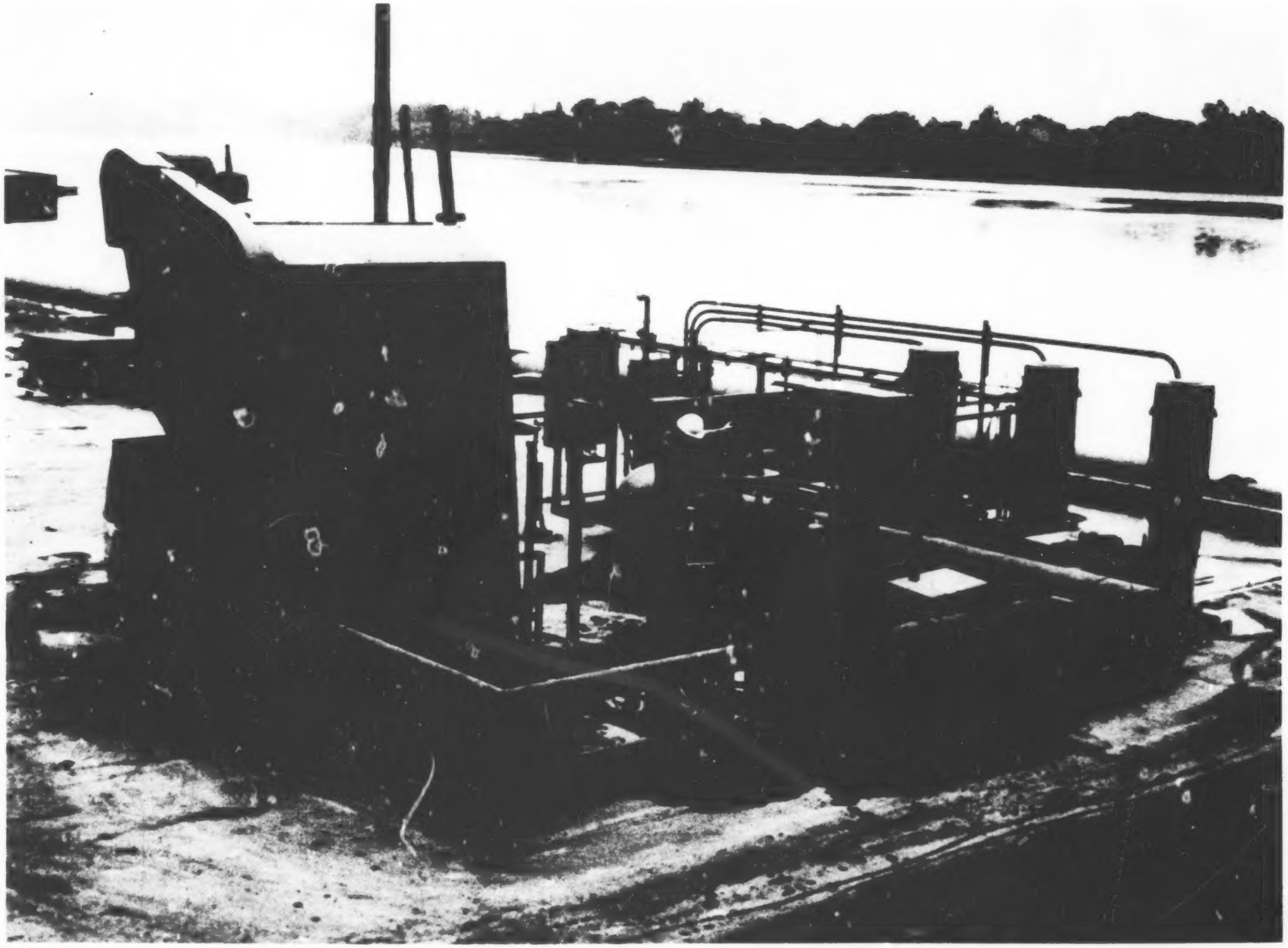
Clarifier rake and bridge being assembled.

Clarifier wall complete; internal steel work continues.

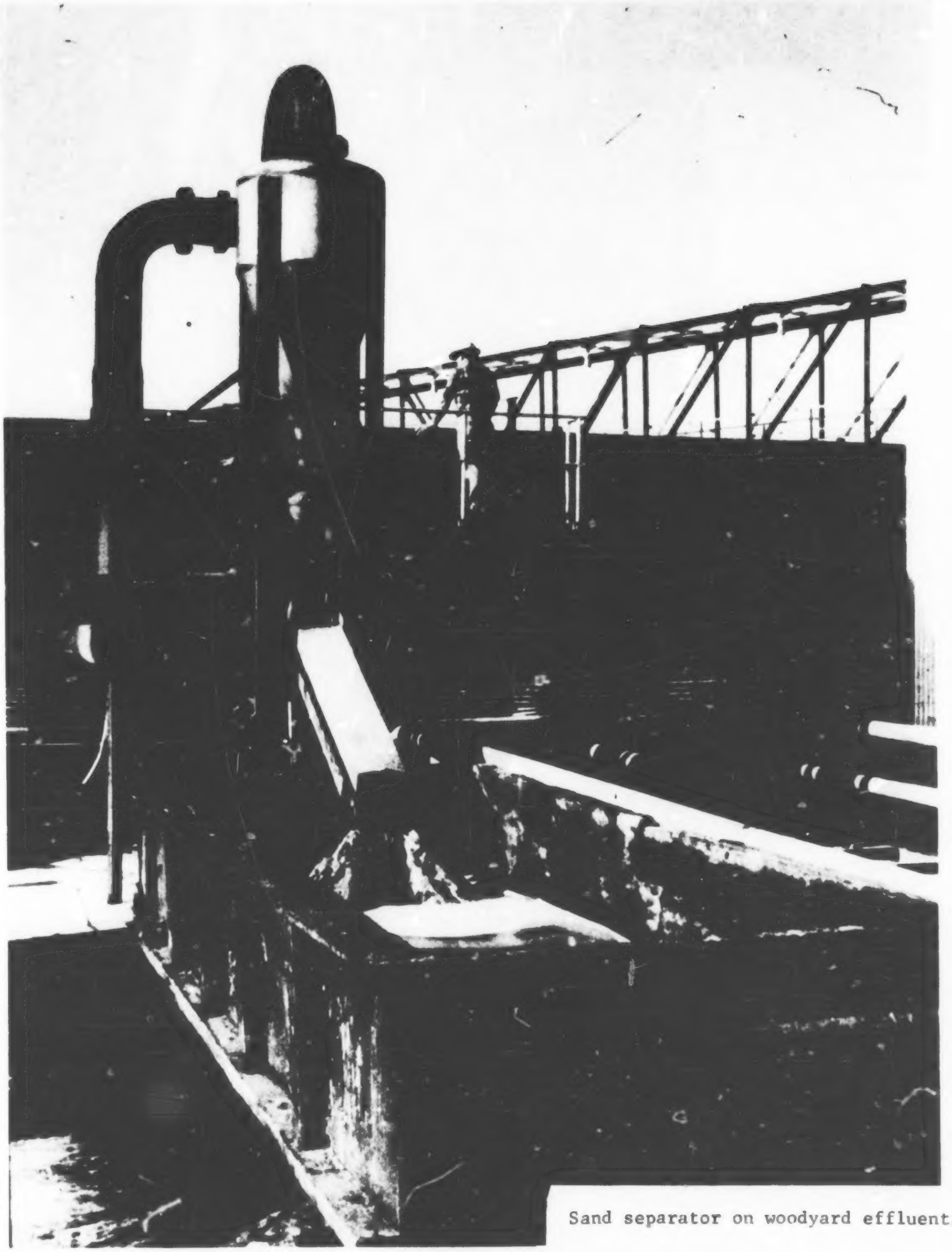
Clarifier construction completed



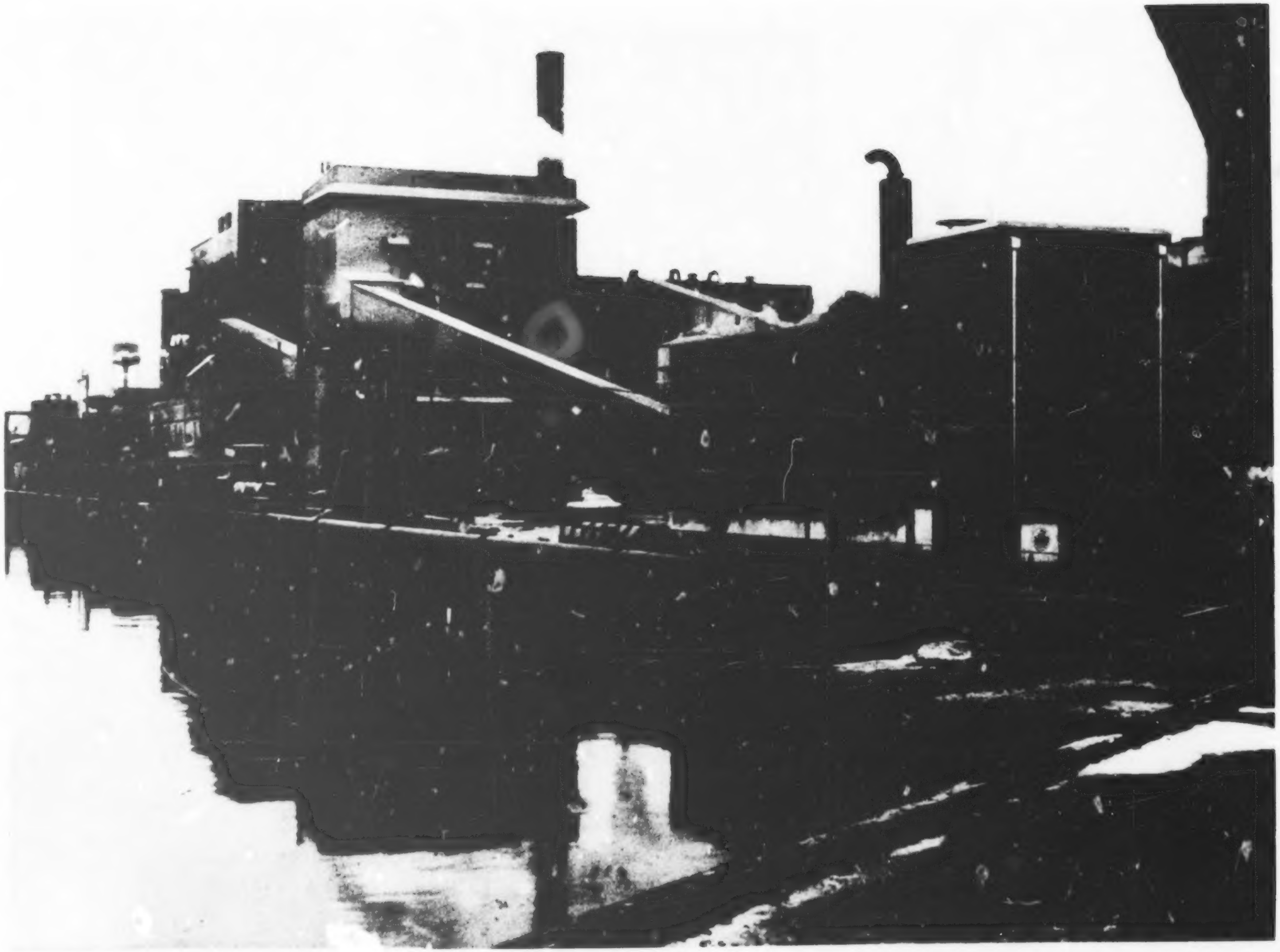
Paper mill effluent pumping station.



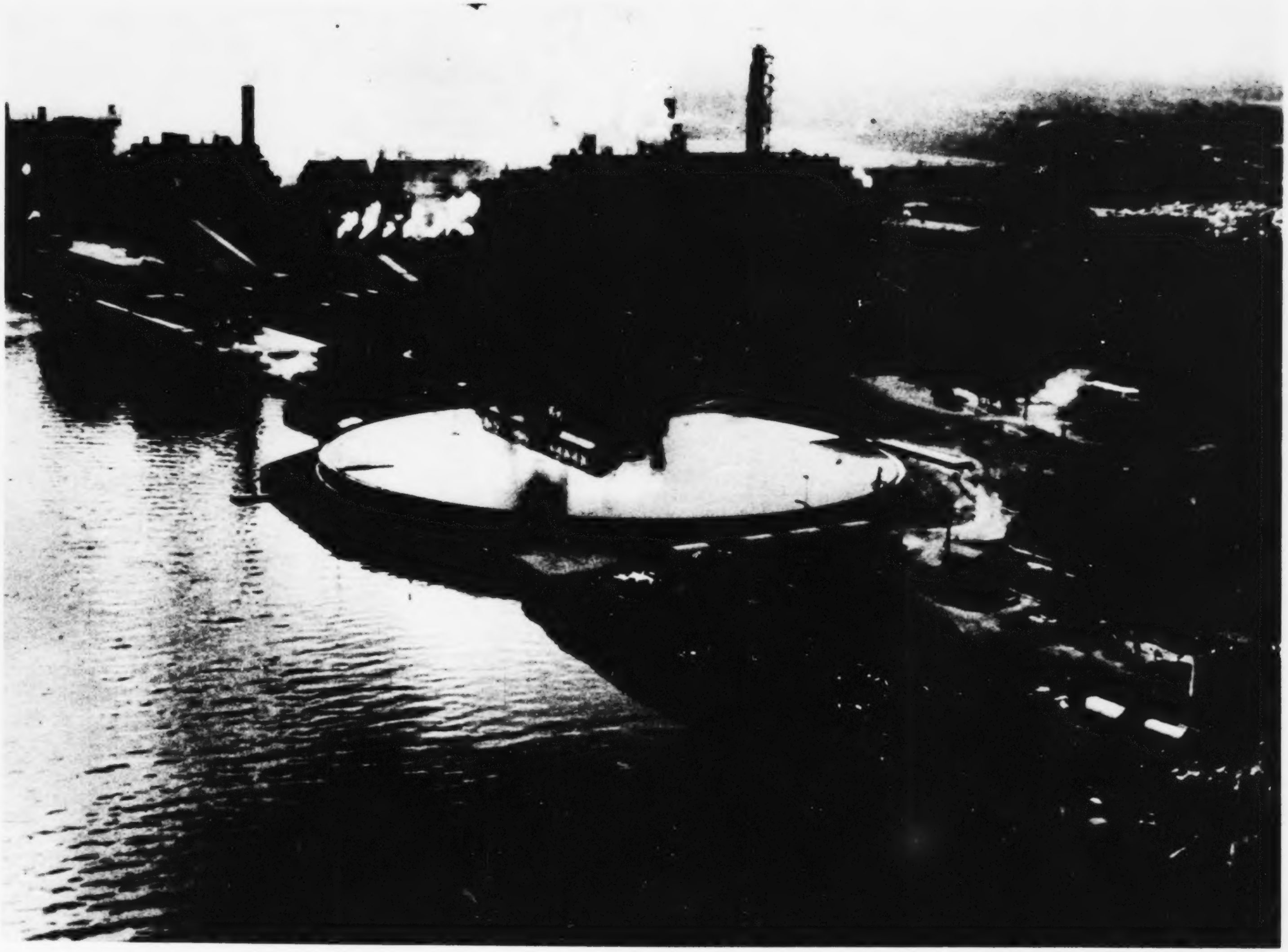
Pulp mill effluent pumping station.



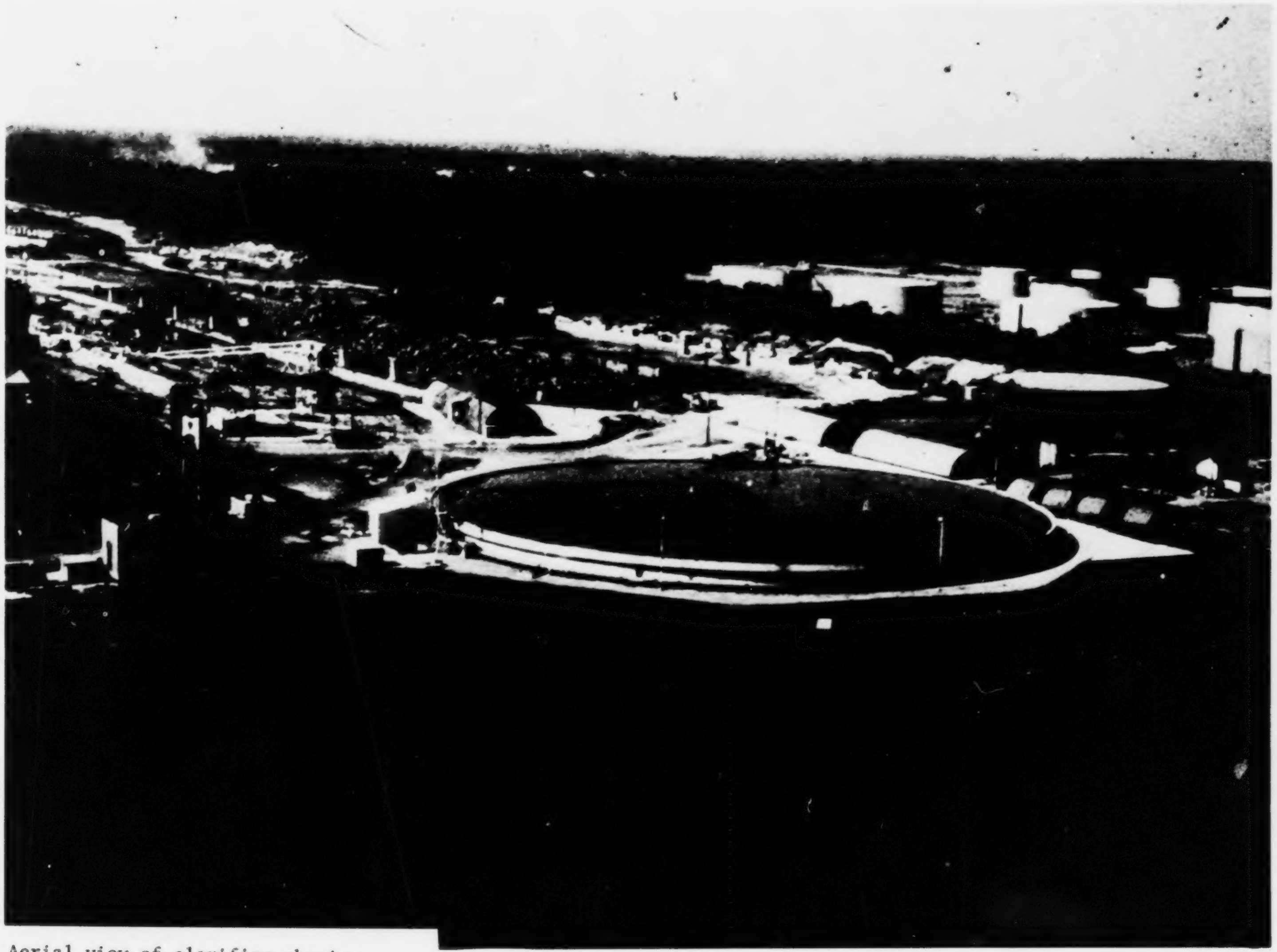
Sand separator on woodyard effluent.



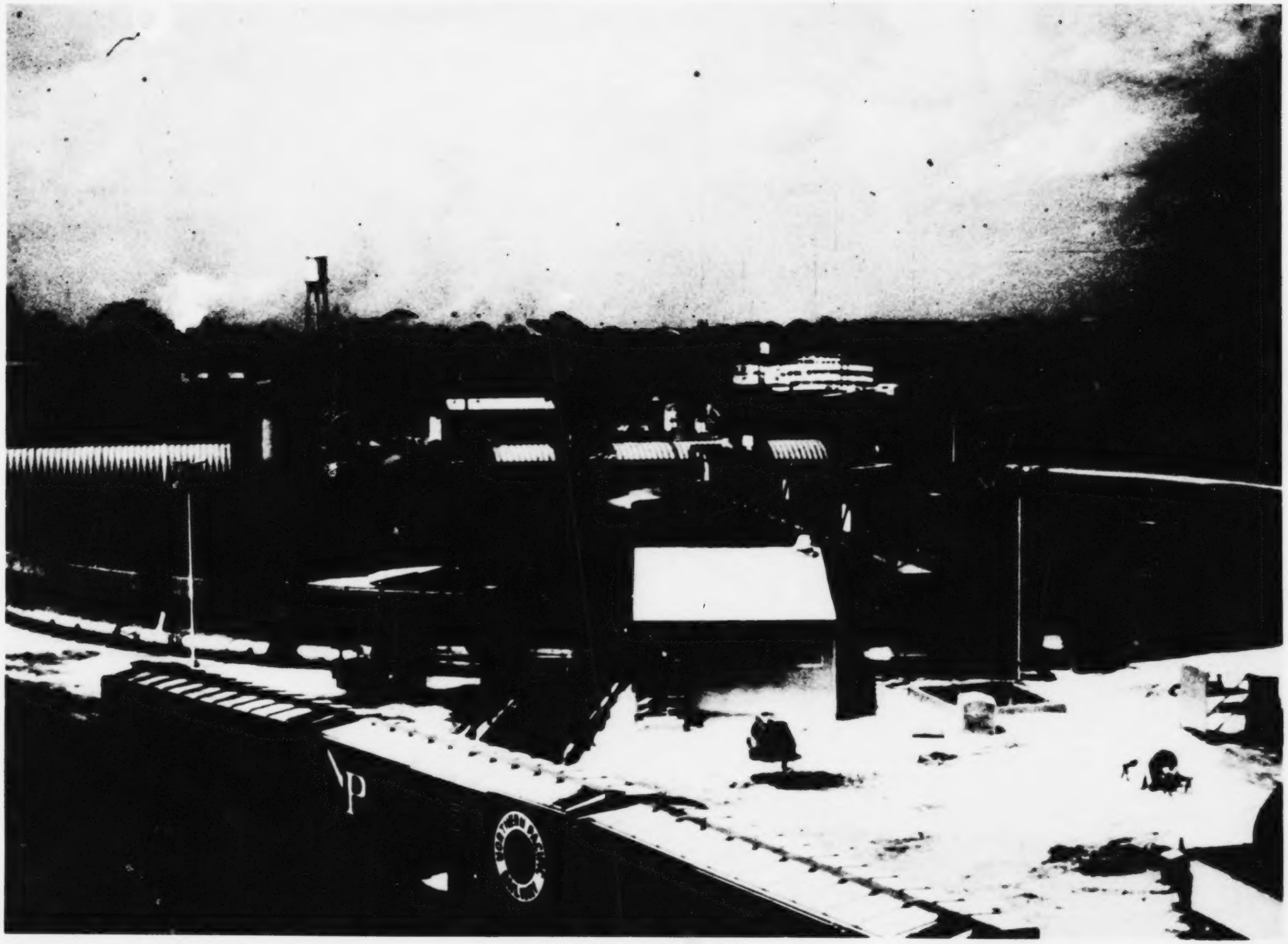
Collection header which takes effluent
from the plant to the clarifier.



Recent aerial view of clarifier in operation with the mill in the background



Aerial view of clarifier showing appearance of the river around the clarifier.



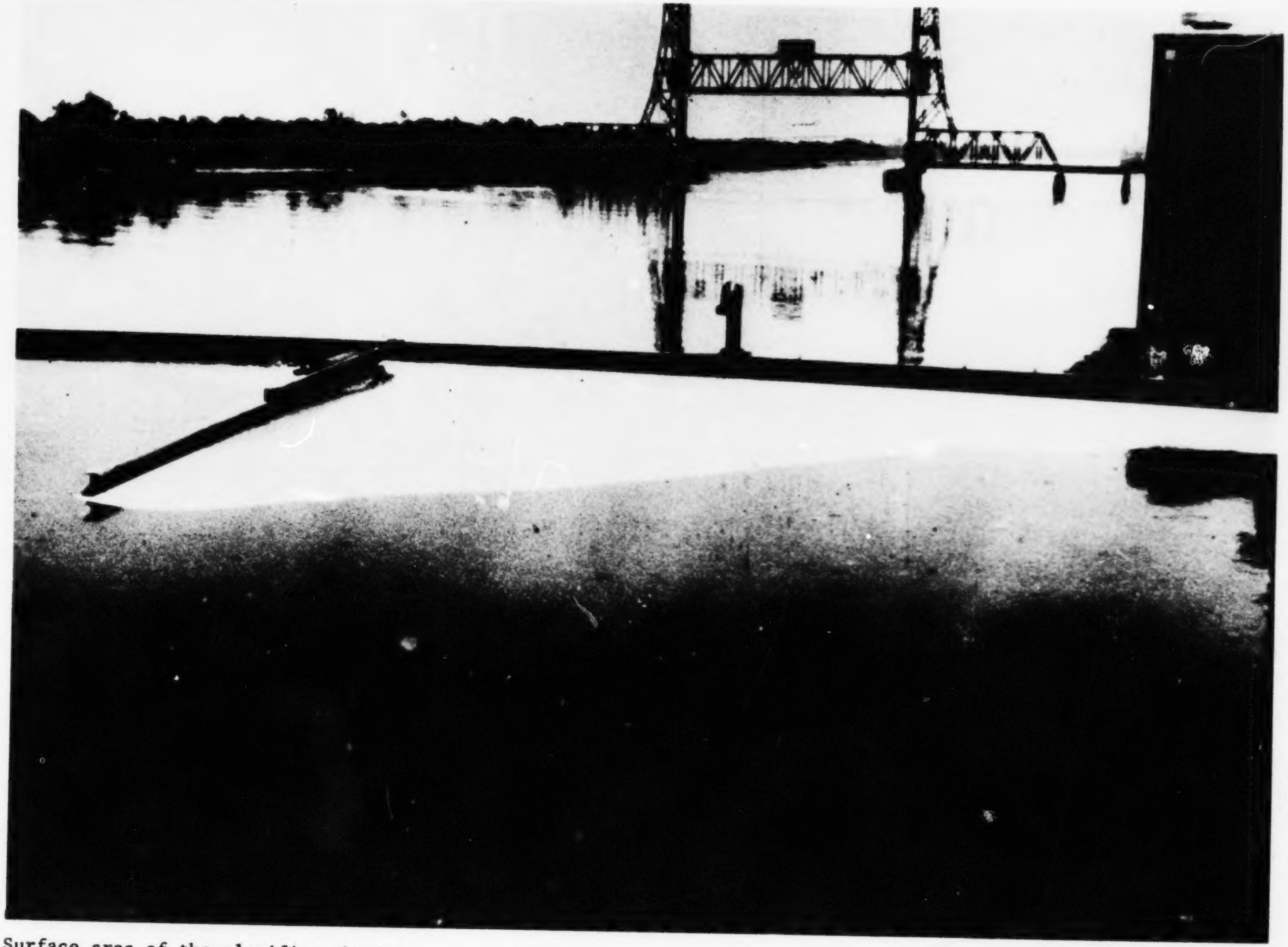
View of clarifier looking up the river.

Sampling sludge in clarifier from
a boat to determine level of sludge.

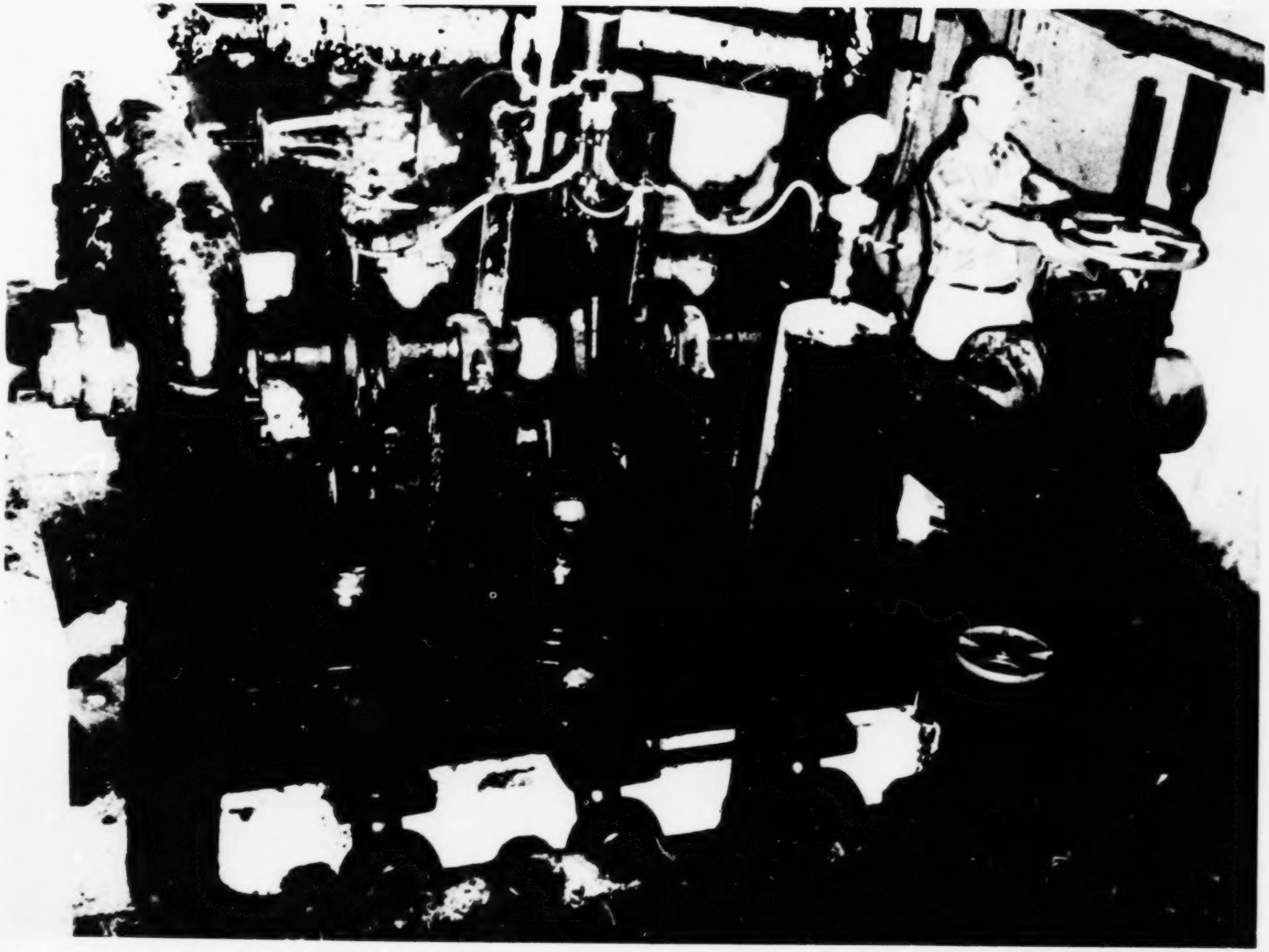
Inlet flow to the clarifier center well.

Water leaving clarifier over the wier.

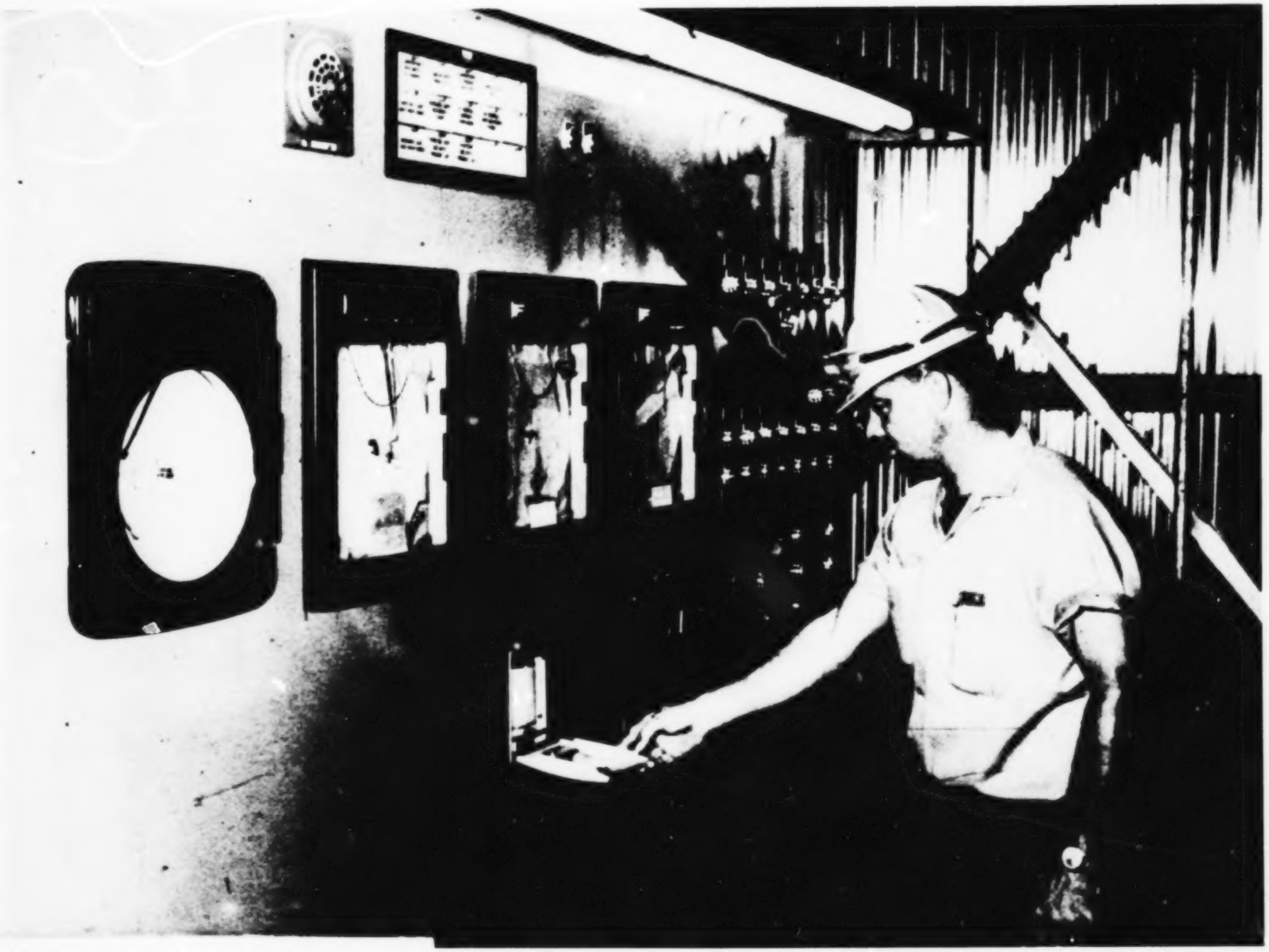
View of effluent as it leaves the system.



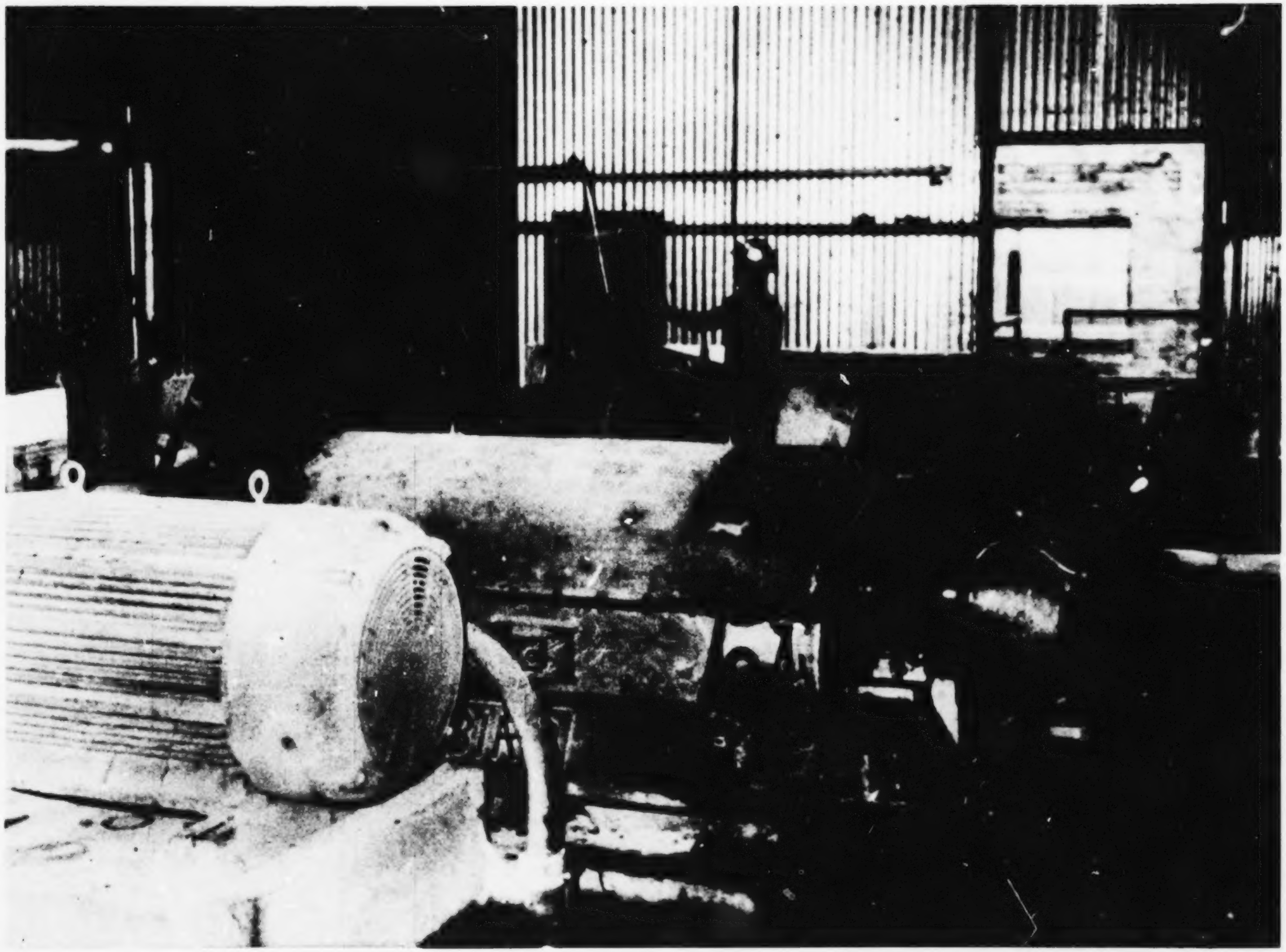
Surface area of the clarifier showing skimmer removing floating material.



Pumping station for underflow from the clarifier.



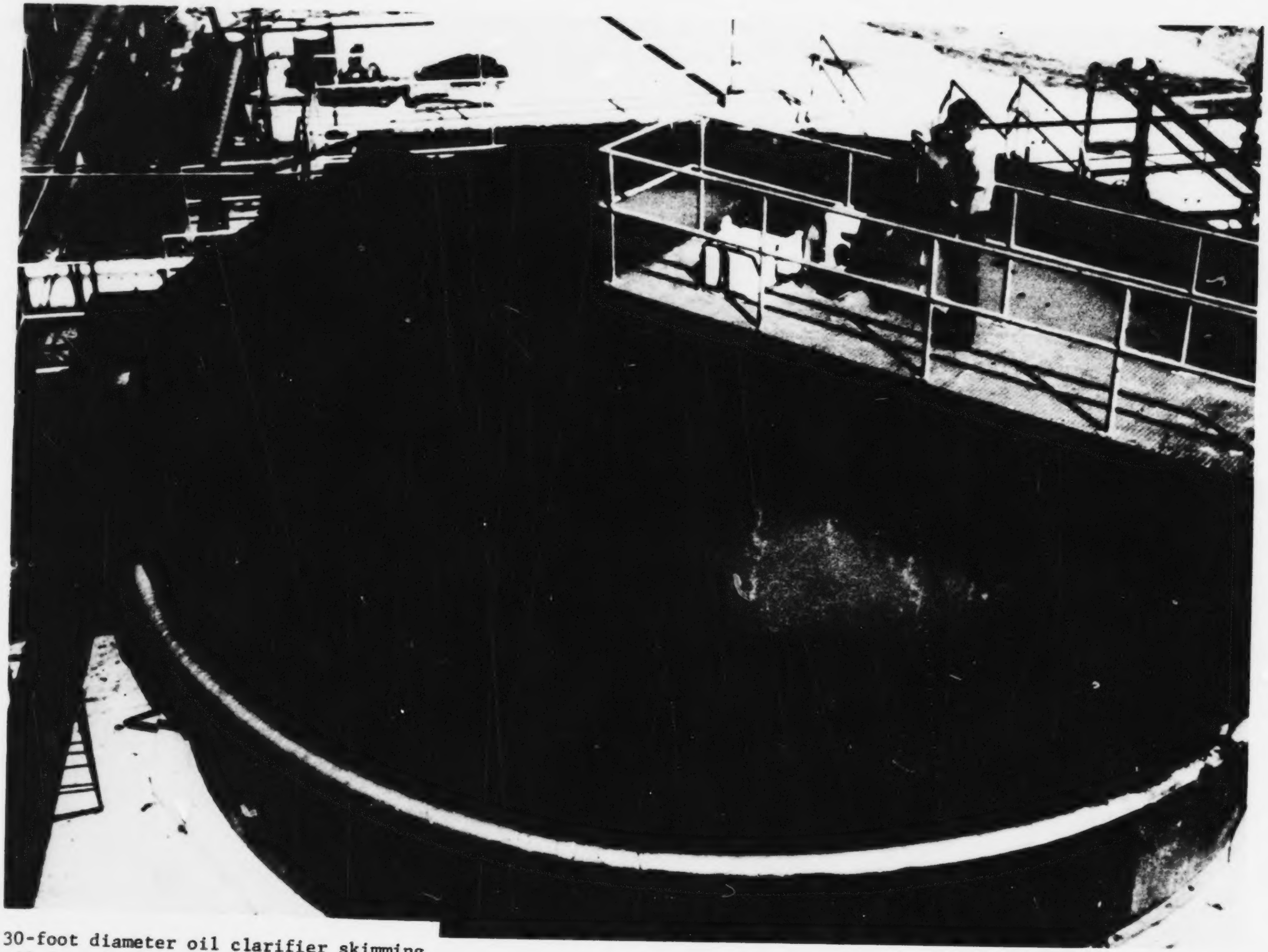
Control system for the effluent operation.



Centrifuge system which dewaters and thickens the clarifier underflow.

Thickened sludge being mixed with bark to be burned in a power boiler.

Closeup of the settled and thickened sludge.



30-foot diameter oil clarifier skimming
oil from distillation plant effluent.

Claude M. Adams

Mr. Howard.

MR. HOWARD: Is Mr. Claude Adams here from Continental Can Company?

MR. ADAMS: Yes.

MR. HOWARD: This is Mr. Claude Adams, Mr. Chairman, who wants to make a statement on behalf of Continental Can.

MR. STEIN: Before Mr. Adams comes up, I think we should indicate that Union Bag -- I keep saying the old name -- Union Camp -- you know when we really get this cleaned up, with your new name of Union Camp, I can think of no better place to celebrate than to get together at Union Camp and sing, "Hallelujah."

But the presentation, I think, was a magnificent one, particularly with the clarifier -- an indication of real candor showing what they can do. But I think -- unless I misread what you said -- when we talk in terms of that clarifier and all that big work we are dealing with from a zero to a four percent BOD reduction -- while the real BOD reduction has come from inplant improvements which we really haven't seen on the slides.

Mr. Howard.

MR. HOWARD: This is Mr. Claude Adams from Continental Can Company who would like to make a statement now.

STATEMENT OF CLAUDE M. ADAMS, MANAGER, CONTINENTAL CAN COMPANY, PORT WENTWORTH, GEORGIA

MR. ADAMS: Mr. Stein and gentlemen, I am Claude M. Adams, Manager of the Continental Can Company plant in Port Wentworth, Georgia. It is a pleasure for us to attend this meeting and we appreciate having this opportunity to acquaint you with our operation and our efforts to help in the improvement of the water quality in the Lower Savannah River.

Concern for our environment is a basic principle which is inherent in the management of all of Continental Can Company's operations. The underlying policies which guide our operation have been set forth quite specifically by Mr. E. L. Hazard, the company President and Chairman of the Board. Mr. Hazard has stated that:

1. We are a company that believes there should be close identity, not conflict between our aspirations, our goals, our actions, and the needs and goals of society. We must place increased emphasis upon applying our skills to help solve society's needs for control of environmental

pollution and for the solution of America's most urgent urban problems.

2. We will participate in the activities of local industrial or community associations to assist with the solution of air and water pollution problems in the specific areas where Continental plants are located.

3. When pollution control equipment is installed on existing facilities, we will select the best equipment that is technically and economically feasible which can be adapted to the facility in question.

These policies have guided the operation of the Port Wentworth mill to the present date, and will continue to do so into the future.

The Port Wentworth mill is located in the city of Port Wentworth on the Savannah River, 21 miles from the mouth of the river. It is an unbleached kraft pulp and paper mill which presently produces 650 tons per day of kraft linerboard. The mill was started in 1948 at a rated production of 450 tons per day, and has been in continuous operation from that time growing steadily to its present size. From its conception, the mill has operated under the principle of water conservation directed toward the economies of operation and minimization of pollution.

Claude M. Adams

In 1965, we were instructed by the State of Georgia to provide exterior treatment facilities for water pollution abatement. This order required that the BOD load effluent of our plant be reduced by 25 percent and that the settleable solids and oils be reduced by 90 percent. We subsequently undertook a study to evaluate our situation and initiated a program which resulted in still further inmill control, consolidation of sewer lines, and the construction of a 190-foot clarifier with its associated auxiliary equipment.

This clarifying operation has now been in operation for almost a year and a half, and the most recent figures verify that we are meeting or exceeding the requirements specified. This accomplishment is particularly striking in the context that our paper production has increased 25 percent from the date of the base-line established for our criteria. That is to say, we have improved our production rates and efficiencies while still meeting rather stringent requirements which were based on operating levels which existed seven years ago. From an efficiency viewpoint, we feel this is a major accomplishment in keeping with the intended spirit of the law, over and above the letter of the law.

We do not intend to remain static in our efforts, however. We feel that it is in our interests to continue to improve our internal operations, treating the causes of pollution at their source rather than correcting the symptoms externally. To this end, further process changes are already under way and planned. In addition, we have already taken the steps necessary to separate all of the mill sanitary wastes from the process wastes and are prepared to have them treated at a proposed new municipal treatment facility.

Gentlemen, this is our record and accomplishment to date. It is our sincere intention to continue these efforts directed at improving our operations. Thank you.

MR. STEIN: Thank you, sir.

Wait one second. Are there any comments or questions?

By the way, the way we are operating here, I suggest the companies or the city not leave, because I suspect in the presentation of the State of Georgia we will have comments on that, and you may want to comment at that time.

I do have one question for clarification to ask you: When you say your paper production has increased 25 percent and you are reducing BOD by 25 percent and settleable oils and solids by 90 percent, do you mean that you are putting out the same number of pounds of BOD, or you are still getting the same percentage decrease?

MR. ADAMS: No, we are not putting out the same pounds, we are 25 percent below the established minimum that was set.

MR. STEIN: Right, I understand. But my point is: As you increase production, if you keep your percentage constant, the load on the stream is greater.

MR. ADAMS: No. I made the statement that we had a base load that was approved --

MR. STEIN: Right.

MR. ADAMS: -- to obtain. We are under that base load even though we have increased production.

MR. STEIN: On pounds per day?

MR. ADAMS: On pounds per day, not pounds per ton. We are under on pounds per ton what we were.

MR. STEIN: Right. All right, thank you.

Are there any other comments or questions? If not, thank you, sir.

MR. HOWARD: Is anyone else here who didn't indicate when they registered that they would like to make a statement, who would like to make a statement? Any of our industries who have come in later?

Mr. Chairman, I would like to complete our statement, if you want to continue now, or if you want to wait until after lunch.

MR. STEIN: I think we had better recess for lunch at the present time.

MR. HOWARD: Just before you do that, I would like to have three or four minutes --

MR. STEIN: Surely.

MR. HOWARD: -- to present a short film.

We have a short color film on water pollution, and the chairman has already said, as he has many times, that we can't reproduce color, but we will waive that requirement and we won't make any objections if it isn't in the record as color. Are you ready to show it? Just a minute, Mr. Chairman. This is going to be a real good film.

... A film entitled "Tom Lehrer Sings" was shown ...

MR. HOWARD: Thank you, Mr. Chairman.

MR. STEIN: We will stand recessed for lunch until 1:30.

... Noon recess ...

- - -

AFTERNOON SESSION

MR. STEIN: Let's reconvene.

Mr. Howard.

MR. HOWARD: Mr. Chairman, I want to continue Georgia's statement by calling on Mr. Charles H. Starling, Director of the Industrial Waste Service, who will give us a report on the program of our industries and what they have accomplished, and our evaluations that have been recently made.

Charlie.

STATEMENT OF CHARLES H. STARLING,
DIRECTOR, INDUSTRIAL WASTE SERVICE,
GEORGIA WATER QUALITY CONTROL BOARD,
ATLANTA, GEORGIA

MR. STARLING: Mr. Chairman, I am Charles H. Starling, Director of the Industrial Waste Service of the Georgia Water Quality Control Board. The following comments will attempt to summarize the present status of the pollution abatement programs of those industries which are considered to be the major sources of industrial

Charles H. Starling

pollution to the lower Savannah River.

In August of 1963, the Public Health Service conducted a survey of the Savannah River and attempted to define the quantities of pollutional material originating with individual sources. The report of this survey was presented at the Interstate Conference in 1965. The report was oriented toward waste streams which lowered the level of dissolved oxygen in the river, and eight industries were cited as discharging significant quantities of oxygen-demanding materials.

During the three-day period, September 29 to October 1, 1969, personnel of the Georgia Water Quality Control Board conducted evaluation surveys of the waste treatment facilities provided by seven of the eight cited industries. Except for the two large kraft pulp mills, samples were collected at approximately one-hour intervals for a continuous 72-hour period and were composited in proportion to discharge flow. In the case of the pulp mills, automatic samplers had been provided.

The findings of these surveys are discussed in the same order as the industries are listed in the Public Health Service Report and to be consistent with the report the waste loads are defined in terms of Population Equivalents or P.E.'s. A P.E. is the amount of oxygen-demand exerted during a five-day period by the daily discharge of domestic sewage from one person. Numerically a P.E. is equivalent to 0.17 pounds of five-day oxygen demand.

Continental Can Company. This kraft pulp mill is the uppermost source of industrial pollution in the lower Savannah, being located at River Mile 20.9. The Public Health Service Report established the oxygen demand of the waste discharged at 130,200 P.E. The company has implemented a program of improvement in internal processes and housekeeping and has provided physical facilities consisting of a mechanical clarifier for reduction of solids and oxygen-demanding materials. Solids removed are dewatered by vacuum filtration and disposed of as land fill. The treatment facilities became operable in June of 1968.

During our three-day evaluation, the P.E. of the waste discharged averaged 80,000 representing a reduction of 38 percent from the 1965 base; this is reasonably consistent with results reported by the company. Solids removal during the evaluation averaged only 48 percent.

Savannah Sugar Refining Company. The Public Health Service Report estimated the P.E. of this waste to be 30,000 and the settleable solids to be five to six tons per day. A later survey by professional engineers determined the P.E. to be 37,500 and the solids discharged to be approximately 25 tons per day. The oxygen-consuming material in this waste was largely sugar associated with lime mud generated in the sugar refining process.

MR. THOMAN: Charlie, I didn't understand you. You said 37,500?

MR. STARLING: 37,500.

The company developed and installed a process for carbonation of the lime mud to make it more amenable to subsequent vacuum filtration and removal of sugar by washing. The filtrate is returned to process for recovery of sugar and the filtered mud is disposed of as land fill.

During the three-day survey, the P.E. averaged 29,850 for a reduction of 20 percent from the 1965 base; settleable solids were reduced to 1,650 pounds for a removal efficiency of 96 percent.

G.A.F. Corporation (formerly Ruberoid Company). This is a roofing manufacturer. The Public Health Service Report estimated the P.E. of this waste to be 4,500; a later detailed survey established the P.E. at 33,000. The company has installed a continuously cleaned disc filter to handle all waste from the pulping process. The solids, which are usable fiber are returned to the pulping process together with a portion of the filtered wastewater. The installation was completed in January 1969.

Our evaluation showed the treated waste to have a P.E. of 18,650 for a reduction of 44 percent; solids removal efficiency averaged 70 percent.

Hercules, Inc. At the time of the Public Health Service Report, no factual information was available on the Hercules waste. The multiplicity of waste sources were discharged into the most convenient outlet to the storm drain system or directly to Dundee Canal. The Public Health Service Report estimated the P.E. output at 3,900 but pointed out that this estimate was made without adequate data. On the basis of our evaluation survey the P.E. is now estimated at approximately 20,400.

It was apparent from a visual inspection of the waste that a stage of oil separation would be required and the company inaugurated a program for rebuilding the internal piping system and collecting the various waste streams at a single point where skimming and settling facilities could be provided for removal of solids and oils. It was considered that these preliminary facilities would be necessary prerequisites for the development of a rational program. These facilities were placed in operation in August 1968.

Charles H. Starling

Our survey established that, at that time, the P.E. was being reduced to 17,900 for a removal efficiency of 12 percent; solids removal efficiency was 37 percent. Results were erratic as to both P.E. and solids.

The company has been notified that it will be necessary to provide adequate treatment of this waste or, as a desirable alternate, to arrange with a municipality to accept the waste for treatment after providing such pretreatment as the city may require.

It should be noted that, in addition to the interstate aspects, this waste stream has intrastate and local impact since it flows a considerable distance in Dundee Canal before reaching the river and creates nuisance conditions in the area traversed by the Canal. If discharge to the Canal is to be continued a very high degree of treatment will be required.

Certain-Teed Products Company. This is another roofing manufacturing operation. The Public Health Service Report estimated the P.E. of the waste stream to be 24,000. A subsequent engineering study, by outside consultants, established the P.E. at approximately 50,000.

The company has installed a mechanical clarifier for all wastes from the pulping operations. Solids, principally fibers, are returned to the pulping process along with approximately 50 percent of the clarified waste.

Our evaluation survey showed the treated effluent to have a P.E. of approximately 14,000 for removal of 72 percent as compared to the base established by the company's consultants. Survey results of settleable solids show removal efficiency of 79 percent.

Union Camp Corporation. This is reported to be the largest kraft pulping operation in the world and is certainly the greatest source of pollution to the lower Savannah. The Public Health Service Report established the pollutional load as a P.E. of 810,000 discharging through seven outlets to the river. The company has constructed a collecting system and pumping stations to divert all waste streams containing significant quantities of settleable solids to a central location for passage through a 310-foot diameter mechanical clarifier for reduction of solids and oxygen-consuming materials. Solids removed are dewatered by centrifuges and burned in the bark boiler. In addition, two small clarifiers, with skimmers for oil removal, have been provided for turpentine and tall oil processing operations. All facilities were started in operation in July 1968 but early operations were accompanied by many breakdowns and malfunctions so that sustained routine operation was not reached until early 1969.

A survey in 1966 by the company confirmed the P.E. figure of 810,000 and established the settleable solids load at 87,100 pounds per day.

During our three-day survey the BOD discharged averaged 602,000 P.E. for a removal efficiency of 24.5 percent of the 1965 base, and a reduction in settleable solids averaging 85 percent. Our survey included one day during which it was not possible to obtain a properly composited sample of raw waste and the results of that day may not be reliable. If the questionable sample is excluded, the BOD removal efficiency becomes 14 percent and the solids removal 87 percent. These latter figures are in fair agreement with the company's records for the month of August which show removal efficiencies of 15 percent for oxygen-demanding materials and 86 percent for settleable solids.

Hunt-Wesson Foods, Inc. The Public Health Service Report attributed a pollutional load to this vegetable oil refinery of 26,000 P.E. but did not refer to a solids discharge in the form of spent bleaching clays. A subsequent survey by the company established the average P.E. at 25,000, of which some 34 percent was contained in three to six tons of spent clay being discharged daily to

Charles H. Starling

the river. The average settleable solids load, attributable to the clay, was 6,730 pounds per day.

The company revised its manufacturing process to eliminate the discharge of spent clay, which material is now removed in solid form and disposed of as land fill. The company also rehabilitated and repaired existing oil separators in the liquid waste streams.

During the first 24-hour period of our survey, one oil skimmer pump was not operating and appeared not to have been operational for some time previously; during this part of the survey, the discharge to the river had an oxygen demand of 30,700 P.E. or 125 percent of the base load. On the two following days, after the oil pump had been repaired, the P.E. of the discharge was 13,000 for a reduction of 48 percent of the base. During the entire survey period settleable solids removal averaged 90 percent.

Meddin Packing Company. This is a slaughtering and meat packing operation. The Public Health Service Report estimated the pollutional discharge to have a P.E. of 1,740. This waste stream discharges into the upper reaches of the Savannah-Ogeechee Canal and flows several miles before reaching the Savannah River. Therefore, it is questionable if it contributes significantly to pollution of interstate waters; however, it does cause local and intrastate problems.

As a result of the recent Clean Meat Act, it has been necessary for meat producers to reevaluate their operations and arrive at policy decisions as to whether certain operations should be upgraded or discontinued. Meddin Company has elected to discontinue slaughtering animals which will have reduced the pollutional discharge to an estimated P.E. on the order of 420. Additional disposal facilities are to be provided within the current year.

Overall Results.

The three-day period, during which our evaluation survey was made, is certainly not of sufficient duration to arrive at a reliable estimate as to the effect of current programs. However, it appears that the eight industries cited as contributing significantly to oxygen depletion in the river may have reduced their oxygen-demanding loads by approximately 25 percent.

Other Pollution Sources.

At the 1965 Conference, American Cyanamid Company was cited as discharging some 690,000 pounds per day of sulfuric acid but not contributing significantly to the oxygen demand of the river. As the result of further studies, we do not now believe the conclusion as to oxygen demand is valid.

During the period May 19-20, 1969, a survey was made of the American Cyanamid operations and the effect of the waste discharge on the river system. The survey involved personnel and facilities of the company, the Corps of Engineers, and the Georgia Water Quality Control Board. The survey was oriented principally toward determining if recent modifications of the acid discharge system were effective in diffusing the waste to an extent that established pH standards are not infringed. A second purpose of the survey was to define the extent of suspended solids which might be expected to deposit in the estuarine beds.

During the first day of the survey a very heavy rainfall occurred which caused significantly greater discharge of pollutants in all categories than occurred on the following day of normal surface runoff. The survey indicated discharges of approximately one million pounds of sulfuric acid on the first day and 830,000 pounds the second. These acid discharges clearly violated established pH standards in the south channel of the river. The suspended solids discharged were 88 tons on the first day and 16 tons on the second.

It was also determined that the discharged

Charles H. Starling

waste contained 132 tons of iron on the first day and 92 tons on the second. The iron is present in the soluble ferrous state when discharged but some portion will react with dissolved oxygen in the river water to form one or more of the several oxides of iron, thus, acting to deplete the oxygen reserve of the river in much the same way as organic wastes but with the important difference that the oxygen demand of the iron is exerted over a comparatively short period as compared to several days or weeks for the organic materials. On the basis of a single laboratory test, it was estimated that the iron discharged would have exerted an oxygen demand of 34,000 pounds on the first day and 25,000 pounds on the second. The iron which is oxidized will precipitate and contribute significantly to the sediment load. The figures given here are not to be taken as a quantitative definition of the oxygen demand of the iron waste, but only as a qualitative indication that the demand is very significant and must be more precisely defined and indicated corrective action taken.

The company has been directed to comply with State pH standards and to provide facilities for reduction of the oxygen demand and sediment load. The company has proposed a plan of action which is acceptable except for the time element involved.

In addition to the major sources of industrial pollution discussed individually above, 55 additional industries have been surveyed. No major sources of industrial pollution were found but 45 required upgrading of treatment for domestic sewage and/or minor industrial waste discharges. Nine of the industries in this group have completed adequate facilities and it is expected that most of the others will be served by public sewers when they become available.

Thank you.

MR. STEIN: Thank you.

How many industries did you cover in that statement, Mr. Starling?

MR. STARLING: Sixty-four.

MR. STEIN: Sixty-four.

But how many of the major ones -- the ones cited specifically as a line item? That is nine and 55.

MR. STARLING: There were eight cited in the 1965 Public Health Service Report as being major contributors of oxygen-demanding materials. We surveyed seven of those eight. The Lebanon Packing Company was not surveyed because we could make a reliable estimate of what has been accomplished, and we expect that could be completed during the present year.

MR. HOWARD: One additional industry -- American

Cyanamid was an industry that was not cited but you did report on that.

MR. STEIN: In addition to the eight, American Cyanamid you have put on as a major pollution source?

MR. STARLING: As a source of acid pollution, but we now feel that it is a major source of oxygen depletion.

MR. THOMAN: Would you go through those figures again on American Cyanamid?

MR. STARLING: I am going to give you a copy of this report, but I will repeat them.

You recall that the survey results on the two days were radically different because of the rainfall conditions. On the first day, the discharge contained a million pounds of sulfuric acid. On the second day, 830,000 pounds. The suspended solids -- not necessarily settleable solids -- were 88 tons on the first day, and 16 tons on the second. The discharge of metallic iron was 132 tons on the first day, and 92 tons on the second.

The estimated or conjectured oxygen demand was 34,000 pounds on the first day; and 25,000 pounds on the second.

MR. THOMAN: You did say 34,000 pounds and 25,000 pounds?

MR. STARLING: That is right.

MR. THOMAN: In other words, we will multiply it by six for your population equivalents because you gave the rest of them in P.E.'s.

MR. STARLING: This is a different animal.

MR. THOMAN: I realize that.

MR. STARLING: This is an immediate figure, but you are reasonably sound on that.

MR. THOMAN: For purposes of expressing it for lay members of the group that would be the way that we would do it.

MR. STARLING: It would be roughly 200,000 P.E. and 150,000 P.E.

MR. THOMAN: Thank you.

MR. HOWARD: Thank you, Charlie.

Any other questions, Mr. Chairman?

MR. STEIN: You may continue, Mr. Howard.

MR. HOWARD: I would like now to call on Mr. Wesley B. Williams, our Director of Planning and Development, who will give us a report on the status and the accomplishments of our abatement program involving our communities cited at the conference.

STATEMENT OF WESLEY B. WILLIAMS,
DIRECTOR, PLANNING AND DEVELOPMENT,
GEORGIA WATER QUALITY CONTROL BOARD,
ATLANTA, GEORGIA

MR. WILLIAMS: Mr. Chairman, I am Wesley B. Williams, Director, Planning and Development, Georgia Water Quality Control Board. I shall present a resume on abatement progress and programs from municipal and other community discharges to the lower Savannah River Basin. Mr. Howard has already presented a summary of the recommendations of the Technical Committee on these community discharges. In the municipal category, the places cited at the conference include Savannah, Travis Field (Savannah Municipal Airport), Garden City, Port Wentworth Corporation, Chatham City Corporation, and Savannah Beach.

City of Savannah. We generally concur with the factual accounts of the city's program as presented in their statement and the city's letter and report of chronological events, which already have been submitted as a matter of record. In view of the preceding, I shall not repeat a complete history of Savannah's programs,

Wesley B. Williams

but there will be some repetition or verification of points already made.

The city of Savannah has not moved as rapidly and as expeditiously with their program as we would have liked. A number of factors have been encountered which have, in fact, caused delays or which have been used as reasons for delaying the program. We do recognize that the complex and expensive nature of the overall program presented problems and questions which had to be resolved. Our biggest argument with the city is that such problems and other delaying factors were not resolved fast enough.

Presently, the city is proceeding with final plans on the sewer work consisting of interceptor sewers, storm and sanitary sewage separation and other necessary sewer work and lift stations to convey the sewage to the Savannah River treatment plant.

Savannah's overall sewerage program has also been recently expanded due to court litigation pertaining to pollution of recreational and shellfish waters other than the Savannah River. We understand that, in the overall sewerage program, raw sewage will be pumped from the existing 2.5 MGD Bacon Park Plant -- a trickling filter plant located on Casey Canal in southeast Savannah -- to the proposed new Savannah Plant. With the completion of the program, treatment at the Bacon Park Plant will be eliminated. Furthermore, the city plans to pump secondary treated effluents directly to the Savannah River from the Wilshire Estates Plant (a stage constructed facility with a design of 1.32 MGD and a present discharge to Haney's Creek, a tributary of the Vernon River) and Windsor Forest Plant (also a stage constructed facility with a design of 1.2 MGD and with present discharge to Hoover Creek, a branch tributary of the Forest River).

The immediate future program does not involve treatment of these latter two wastewaters at the Savannah River Plant; only secondary effluents will be pumped. We had previously recommended that all the aforementioned wastewaters be eliminated from shellfish and recreational waters in long-range planning and, hence, we generally concur with the city's approach in this regard. Plans are also under way whereby Savannah will treat sanitary sewage from various industries along the Savannah River upstream from the corporate limits.

The decision to pump the raw sewage from the Bacon Park area and other areas to the Savannah River Plant increased the proposed plant size from an originally planned 14.0 MGD to 20.0 MGD. Final design on an activated sludge plant, estimated to cost on the order of

$8 million, is presently under way. The city has already cleared the new Savannah River Plant site and is proceeding with site filling and grading. Soil studies by a reputable soil consulting firm have indicated that a site stabilization period of approximately one year will be required before plant construction can commence.

For the city of Savannah program (excluding Travis Field), a Public Law 660 grant offer of $1.2 million was made on January 10, 1968. It is expected that this grant will be increased by approximately $2 million to bring the city's grant to a full entitlement of some 33 percent of the eligible cost. The city has also had grant offers from the Department of Housing and Urban Development covering certain sewerage improvements.

Travis Field (Savannah Municipal Airport). Travis Field presently has primary treatment (Imhoff tanks) but no effluent disinfection. Pending final approval of plans and specifications, a proposed 1.0 MGD activated sludge plant should be placed under construction soon. A Public Law 660 grant offer of approximately $63,000 was transmitted on October 9, 1969, and has been accepted by the city. This offer represents the amount originally requested and is subject to an upward adjustment due to an inflationary increase in construction cost and other factors. The Travis Field program will be under the supervision of the city of Savannah.

Garden City. A Public Law 660 grant offer of approximately $91,000 was transmitted on October 9, 1969, and has been accepted by the city of Garden City. This offer represents the amount originally requested and is subject to an upward adjustment due to an inflationary increase in construction cost and other factors.

I might add here that there was some apprehension that the original offer would stand, but I am saying, to allay any fears, that we want to give them a fair shake at the time the bids come in.

The city has authorized its consulting engineer to proceed with final plans and specifications for a 0.85 MGD activated sludge plant. Estimated date for taking bids on the project is May 1, 1970.

Port Wentworth. At the time of the first conference, the water and sewerage systems in the city of Port Wentworth were owned and operated by the Port Wentworth Corporation. Subsequently, these systems were purchased by the city of Port Wentworth and the city proceeded immediately with planning for sewer improvements and a secondary treatment plant. A Public Law 660

Wesley B. Williams

grant offer of approximately $88,000 was transmitted to the city on October 9, 1969, and has been accepted. The offer represents the amount originally requested and is subject to an upward adjustment due to an inflationary increase in construction cost and other factors. The city has authorized its consulting engineers to proceed with final plans and specifications on a 0.5 MGD activated sludge plant. Estimated bid date is May 1, 1970.

Chatham City Corporation. This corporation owns and operates a 105,000 GPD primary treatment plant with effluent disinfection, which serves the corporation's apartment complex along with a public school and a small industry, all within the corporate limits of Garden City. The existing plant affords only poor primary treatment and portions of the plant are in a poor state of repair. The owners have had a preliminary engineering report prepared for plant improvements including secondary treatment. There is a possibility that this system may be connected to the Garden City system which we consider a better alternate than retaining the existing plant.

Savannah Beach. In line with the Technical Committee's recommendations, Savannah Beach did effect, although somewhat belatedly, repairs to the existing primary plant and installed effluent chlorination.

Wesley B. Williams

However, at the time of our latest inspection, the city had never repaired the plant effluent line. The city has had an engineering report prepared for a new 1.0 MGD activated sludge plant and has applied for a Public Law 660 grant. Savannah Beach has been determined to be eligible for such a grant and their application is presently being processed.

It should be mentioned in the cases of Garden City, Port Wentworth, and Travis Field that projects for secondary treatment were delayed by the lack of Public Law 660 grant funds and a belated Metropolitan Planning Report which recommended a joint venture of these three communities toward providing a single plant. The Metropolitan Planning Committee recommendation had considerable merit and was duly considered by all parties concerned. However, each community finally decided to build its own plant and the recommendation, regardless of merit, only served to cause delays.

It should also be mentioned that effluent disinfection, or its equivalent, will be required for all proposed treatment facilities. Also, our program of pollution abatement in the Savannah area will include all known discharges, even if such discharges were not cited at the first conference or if such discharges are to intrastate waters.

Copies of letters from the cities of Savannah, Port Wentworth, Garden City and Savannah Beach and the Chatham City Corporation regarding their programs are presented herewith as a matter of record.

(The letters above referred to follow.)

City of Savannah, Georgia

OFFICE OF THE CITY MANAGER

September 24, 1969

RECEIVED
SEP 25 1969
GEORGIA
WATER QUALITY
CONTROL

Mr. R. S. Howard, Jr., Executive Secretary
State Water Quality Control Board
47 Trinity Avenue
Atlanta, Georgia 30334

Re: Savannah, Georgia Sewerage System and
Pollution Abatement Program; Status Report

Dear Mr. Howard:

A quarterly report on the progress of Savannah's pollution abatement program for the period ending September 30, 1969 is submitted herewith.

As previously reported, the contract for clearing and grubbing the new treatment plant site on the north side of President Street has been completed. Construction contract documents for grading and placing fill at the treatment plant site have been completed and bids will be received for this work on October 15, 1969. This work will be partially financed with a FWPCA (PL 660) grant and the various Federal requirements relating to the contract documents are being complied with.

Plans and specifications for the York Lane (formerly Oglethorpe Avenue) trunk line were forwarded to the Georgia State Water Quality Control Board on February 25, 1969 for review and approval and have been informally discussed with the Board's staff engineers on several occasions since that date. These documents are now being further revised to utilize variable speed pumps. They will be resubmitted for approval.

A construction contract for the project entitled "Bacon Park Collector System" was awarded August 25, 1969. This work is scheduled for completion by December 23, 1969. The City is initially financing this construction project since the previously approved HUD grant in the amount of $363,300 will be paid to the City only after the other two projects involved in this HUD grant have been placed under contract and these are awaiting further progress being made on the new treatment plant. The contract document format and other HUD requirements are being met since a grant is involved.

Field survey work for the project entitled "Industry Drive (West Side) Intercepter System, Part II" has been completed. Construction contract documents are now being completed. It is still planned to combine this project with Part I for the purpose of setting up and administering one contract.

As previously reported, contract documents for the project entitled "Laurel Grove-Victory Drive Intercepter System" were completed about two years ago. HUD has requested that this project and the "Industry Drive (West Side) Intercepter System" project be held in abeyance until the final contract is awarded for the treatment plant since their grant is applicable only to sewer line projects for which treatment plant facilities have either been provided or are definitely in the process of being provided. This matter will be reviewed with HUD officials at the proper time, since proceeding with some of the storm separation projects is highly desirable in order to eliminate the necessity for simultaneously proceeding with all of these separation contracts.

The City desires to proceed with construction of the Travis Field sewage treatment plant, which was designed about two years ago and has been awaiting a Federal grant in accordance with an application filed with the FWPCA (under PL 660). The project has been informally discussed on several recent occasions and by letter dated August 28, 1969 the City's consulting engineer, Errett F. Gunn, submitted updated cost and population data to the Georgia State Water Quality Control Board. This information was subsequently forwarded to the Atlanta office of FWPCA by the Board's letter dated September 5, 1969. It is hoped that this effort will result in a grant offer which will permit this project to proceed with currently available City funds which have been earmarked for this purpose for the past two years.

In addition to the FWPCA order that Savannah eliminate pollution in the Savannah River, the City has now been directed by a Superior Court Order dated September 10, 1969 to eliminate pollution in the lower portions of the Casey Canal and the Vernon River as a result of citizens living in these areas having brought suit against the City. This total requirement has created a very difficult financial situation for the City which the Mayor and Aldermen are attempting to resolve. In the meantime, there is no slowdown in proceeding with the engineering and initial construction requirements to eliminate pollution in the Savannah River. This matter will presumably be discussed during the reconvened enforcement conference scheduled by FWPCA to be held in Savannah October 29-30, 1969.

Sincerely,

Picot B. Floyd

Picot B. Floyd
City Manager

F:D:he
Encl

cc: Mayor and Aldermen
Thomas & Hutton Engineering Co.
Jones & Fellers
Hussey & Gay Consulting Engineers
Wiedeman & Singleton
FWPCA (Atlanta)
HUD (Atlanta)

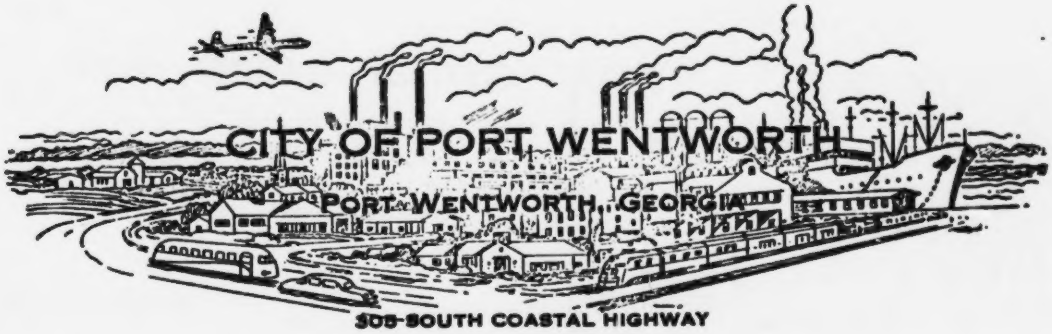
CITY OF SAVANNAH
POLLUTION ABATEMENT PROGRAM
STATUS REPORT - SEPT. 30, 1969

PROJECT	COST	ENGINEER	STATUS
Treatment Plant Site Acquisition	$ 100,000	City	Complete
Treatment Plant Design and Construction	5,290,000	Wiedeman & Singleton-Hussey & Gay	
Design			
Site preparation			Plans for site preparation complete.
Plant			
Construction			
Site preparation			Site clearing complete. Bids due Oc 15, 1969 for grading and placing select fill.
Plant			
Kayton Canal Intercepter System	2,450,000	Thomas & Hutton	
Design			Plans being prepared. Now 60% complete.
Construction			
York Lane (formerly Oglethorpe Ave) trunk line	600,000	Thomas & Hutton	
Design			Plans 99.9% complete. Being slightly revised for resubmission to GSWQCB
Construction			
Paulsen Street Intercepter System	1,385,000	Hussey & Gay	
Design			Plans being prepared. Now 10% complete.
Construction			
Laurel Grove-Victory Drive Intercepter System	340,000	Thomas & Hutton	Plans complete. Will proceed per schedule depending on HUD requirements
Design			
Construction			
Industry Drive (Westside) Intercepter System		Wiedeman & Singleton-Hussey & Gay	
Part I	336,000		Plans complete. Will proceed per schedule, depending on HUD requirements
Design			
Construction			

PROJECT	COST	ENGINEER	STATUS
art II Design Construction	700,000		Plans being completed.
acon Park Collector System Design Construction	83,900	Jones & Fellers	Plans complete. Contract awarded Aug. 25, 1969. Work under way.
iscellaneous (Repairs to existing systems, house laterals, related improvements)	460,100	City	This work being coordinated with remainder of program
iver Street Intercepter Design Construction	200,000	Thomas & Hutton	Plans partially complete. Final plans will depend on other improvements now being made in area. These improvement are progressing
ontingencies	475,000		
Total	$12,420,000*		
ravis Field Treatment Plant	250,000**	Errett F. Gunn	Plans complete for a separate plant. FWPCA (PL 660) grant expected soon

*It is anticipated that Federal grants totaling $2,300,000 (PL 660) and $863,000 (HUD) will be made available to partially offset this cost.

**It is anticipated that a PL 660 Federal Grant (30%) will be available to partially offset this cost.



CITY OF PORT WENTWORTH
PORT WENTWORTH, GEORGIA
305 SOUTH COASTAL HIGHWAY
PHONE 964-4379

October 24, 1969

Mr. R. S. Howard, Jr.
Executive Secretary
State Water Quality Control Board
47 Trinity Avenue, S. W.
Atlanta, Georgia 30334

Dear Mr. Howard:

In answer to your letter of October 10, 1969, the City of Port Wentworth submits to you the below listed itinerary as to our Pollution Abatement Program:

March 1, 1970 - Complete plans and specifications.
April 1, 1970 - Approval received from all regulatory agencies.
May 1, 1970 - Receive bids.
May 15, 1970 - Award contract.
June 1, 1970 - Begin construction (210 day contract).
December 31, 1970 - Complete construction.

The City of Port Wentworth will be represented at the enforcement conference October 29 and 30. At the present time, Mayor Triplett does not plan to present a written or oral statement to the conference.

Hoping our plans on pollution abatement meets with the approval of the Board, I am, for the Mayor and Council,

Sincerely,

CITY OF PORT WENTWORTH

Harold D. Bennett
Harold D. Bennett
Clerk of Council

HDB/la

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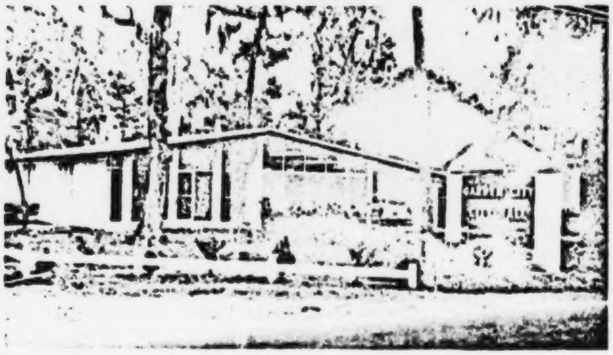
OCT 27 1969
GEORGIA
WATER QUALITY
CONTROL



CITY OF GARDEN CITY
96 MAIN STREET
GARDEN CITY, GEORGIA

TELEPHONE 236-1349

MAYORS OFFICE

October 27, 1969

State Water Quality Control Board
47 Trinity Avenue, S. W.
Atlanta, Georgia 30334

Attn: Mr. R.S. Howard, Jr.

Subject: Garden City
Abatement Program

Dear Mr. Howard:

The following is a schedule of our program as given to Garden City by the Engineering firm of Hussey and Gay:

3-1-70	Complete plans
4-1-70	Review completed by Regulatory Agencies
5-1-70	Receive bids
5-15-70	Award contract
6-1-70	Begin construction
	210 day contract
	complete construction 12-31-70

Sincerely,

Rupert W Bazemore

Rupert W. Bazemore
Mayor of Garden City

RWB/id

RECEIVED
OCT 28 1969
GEORGIA
WATER QUALITY
CONTROL

JOHN H. DANIELS
CHAIRMAN OF BOARD
HENRY M. BUCKLEY
CLERK OF COUNCIL
BART E. SHEA
RECORDER AND
TOWN ATTORNEY
WILBUR D LUNDQUIST, M.D.
HEALTH OFFICER
WALTER W. OTTO, M.D.
ASST. HEALTH OFFICER

MICHAEL J. COUNIHAN, MAYOR

COUNCILMEN
ROBERT F. CARY
JOHN H. DANIELS
C. LEWIS HOHENSTEIN
MILLEDGE C. JONES
EDWARD JUNG
GEORGE F. SCHWARZ

EXECUTIVE OFFICES
SAVANNAH BEACH
P. O. Box 128
TYBEE ISLAND
Savannah Beach, Ga. 31328

PHONE 786-4573

October 27, 1969

RECEIVED
OCT 28 1969
GEORGIA
WATER QUALITY
CONTROL

Mr. R. S. Howard, Jr. Executive Secretary
State Water Quality Control Board
47 Trinity Avenue, S. W.
Atlanta, Georgia 30334

Dear Mr. Howard:

This is in answer to your letter of October 10, 1969, which was delayed due to my absence from the city.

In your letter referred to above you requested us to provide your office with a summary of the current status of Savannah Beach's abatement program. We are pleased to advise that we are now in the process of acquiring the site of the treatment plant.

Immediately following the acquisition of this land we will authorize our Engineers, Thomas and Hutton, to proceed with the final design of the Treatment Plant and Lift Station.

We are now making a study of our water rate schedule with the view of establishing new rates which will be put into effect on May 1, 1970. After these rates have been adopted, estimated revenue at the new rates will be computed and a copy sent to the State to show that the project is feasible. Funds for the construction will come from the sale of bonds backed either by revenue of the system or by a County Ad Valorem tax.

Your help and assistance in this matter is appreciated.

Yours very truly,

Michael J. Counihan

Michael J. Counihan, Mayor

CHATHAM CITY CORPORATION
DEVELOPER OF CHATHAM CITY
POST OFFICE BOX 8807 ◆ PHONE 234-0374
SAVANNAH, GEORGIA

OCTOBER 24, 1969

MR. R. S. HOWARD, JR.
EXECUTIVE SECRETARY
STATE WATER QUALITY CONTROL BOARD
47 TRINITY AVENUE, S. W.
ATLANTA, GEORGIA 30334

DEAR MR. HOWARD:

YOUR LETTER OF RECENT DATE HAS BEEN RECEIVED AND WE SEND THE FOLLOWING INFORMATION.

ITEM 1. OUR ENGINEERS HUSSEY & GAY HAD A REPRESENTATIVE MR. CHARLES WILCOX ACCOMPANY ME ON A TRIP TO ATLANTA IN SEPTEMBER TO DISCUSS THIS MATTER IN PERSON WITH YOUR REPRESENTATIVE MR. JULIAN C. SHAW.

ITEM 2. AS A RESULT OF THIS DISCUSSION MR. SHAW WROTE A LETTER OUTLINING POSSIBLE ALTERNATE PLANS FOR THE TREATMENT OF WASTE AT CHATHAM CITY CORPORATION. WE HAVE INVESTIGATED THE QUESTIONS AS SET FORTH AND HAVE ARRIVED AT TENTATIVE DECISIONS.

ITEM 3. PARAGRAPH TWO HAS BEEN COMPLICATED BY GARDEN CITY'S COUNCIL APPROACHING CHATHAM CITY TODAY OCTOBER 24TH TO INVESTIGATE THE POSSIBILITY OF OUR TYING IN TO GARDEN CITY'S PROPOSED SYSTEM.

ITEM 4. I HAVE SPENT THE AFTERNOON DISCUSSING THE NEW PROPOSALS WITH BILL GAY AND HOPEFULLY WILL HAVE HIS NEW RECOMMENDATION AND GUIDE LINES IN THE IMMEDIATE FUTURE.

ITEM 5. IT IS OUR PRESENT HOPES AND INTENTIONS TO MEET THE DEAD LINE AS SET FORTH BY THE STATE WATER QUALITY CONTROL BOARD AND FURTHER WITHIN THE VERY NEAR FUTURE TO INFORM YOU OF THE PROPOSED PLANNED SCHEDULE FOR CONSTRUCTION.

YOURS VERY TRULY,

SYLVAN M. BYCK, JR.
VICE PRESIDENT

RECEIVED
OCT 27 1969
GEORGIA
WATER QUALITY
CONTROL

SMBJR/JN

MR. STEIN: Thank you.

Are there any comments or questions?

MR. HOWARD: There is some question about completing a facility, I think -- was it Port Wentworth? -- constructed by May of 1969, did you say?

MR. WILLIAMS: The city of Port Wentworth gave a schedule of March 1, 1970, to complete plans and specifications; April 1, 1970, approval received from all regulatory agencies -- I am reading this verbatim here -- May 1, 1970, receive bids; May 15, 1970, award contract; June 1, 1970, begin construction 210-day contract; December 31, 1970, complete construction.

As I recall, Garden City gave a very similar schedule to this.

There was a question, I believe on would that be enough construction time to realistically complete the plant without putting undue stress on the equipment, supplies, and the contractor.

MR. THOMAN: Mr. Williams, to clarify one point for the record: Did you state that the Savannah Metropolitan Planning Commission recommended to Garden City, Port Wentworth and Travis Field that they have a joint treatmant plant?

MR. WILLIAMS: Yes.

MR. THOMAN: They did originally recommend that?

MR. HOWARD: Let me say we were the ones that recommended it some time before that.

MR. THOMAN: Yes. But did the Savannah Metropolitan Planning Commission recommend this?

MR. HOWARD: Sure.

MR. THOMAN: On what basis, then, did they certify that it was within the concept of a regional plan that they have individual treatment plants which they subsequently did to qualify for a 33 percent grant rather than a 30 percent grant?

MR. WILLIAMS: I am not sure I am in a position to answer what their reasoning was on that.

MR. THOMAN: I am sitting here in a dual capacity as a conferee, but also as the contract signer and I did sign a contract with those three cities on the grants and --

MR. HOWARD: Maybe that was an alternate they had, then, to get the other three percent.

MR. STEIN: That is another 10 percent.

MR. THOMAN: It is 10 percent of the grant, but it is three percent of the total cost.

MR. HOWARD: That is right.

MR. THOMAN: And as a Regional Director I don't choose to sign a contract with the Federal Government when I am being compromised.

MR. WILLIAMS: Mr. Thoman, I don't remember the exact wording of the recommendation, but it was a belated recommendation, as I pointed out, which caused a delay in the program.

Had it been made earlier, then I think a lot of progress could have been made toward the Metropolitan approach.

If I may, I could call on Mr. Warren Griffin who handles our grant program and he can probably throw a little more light on that.

STATEMENT OF WARREN GRIFFIN, ASSISTANT TO EXECUTIVE SECRETARY, GEORGIA WATER QUALITY CONTROL BOARD, ATLANTA, GEORGIA

MR. GRIFFIN: Mr. Chairman, Warren Griffin, Assistant to the Executive Secretary of the Water Quality Control Board. I think what happened on this originally, Mr.

Thoman, was the Metropolitan Planning Commission did recommend a single facility in this area. We worked with the local governments in looking at the single facility to see if we could get them to build this as opposed to the individual plants.

The municipalities asked their engineers to study the cost comparisons between either building a single plant or the individual facilities. The costs that the engineers came up with were that it would be more expensive to build the combined facility than it would be for each community to build its own plant.

So when this study came out, I believe the Metropolitan Planning Commission here revised their report to recommend and show that the individual plants be built rather than one facility.

MR. HOWARD: In other words, you would approve anything we figured if we figure hard enough; that is what that came out at.

MR. THOMAN: You said that, sir, not me.

MR. WILLIAMS: The recommendation was real good. They just came out with it too late in my opinion. Maybe that would be a program they could work for for the next go-round.

MR. STEIN: It is just the last thing that confused me. How would it have made it any cheaper if the recommendation came out earlier?

MR. HOWARD: Well, you see, Mr. Chairman, you had three engineering firms involved -- or two -- you see, and they took different views on the same figures at different times.

Does that explain it to you? I didn't think so.

It is something like the benefit cost ratio of the water resources project.

MR. WILLIAMS: In regards to the costs, sir, there were a number of sewer outfall lines and connecting lines which presently go through uninhabited territory, through muckland, swamps, and so forth, which costs quite a bit to convey all this sewage to some point; also some extra lift stations.

MR. STEIN: I can understand that, but let's follow this.

I don't have any problem -- I am speaking for myself and not Mr. Thoman -- with the intent of the program to give you that extra 10 percent grant to get it up to 33 percent.

If you went through that exercise and came up with that judgment, it is all right. The only problem I had is the stuff in the record that if you came up with your recommendation earlier you would have come out another way.

MR. GRIFFIN: The business of cost estimates, and so forth, here could be that we came up with some original numbers; then by redoing it, the Metropolitan Planning Commission report also, Mr. Stein, wasn't that detailed in a cost estimate. They didn't go into cost as deeply as the consulting engineer for the communities did.

I think Mr. Williams might have been speaking more in technical terms of when you look at this you like to see one plant instead of three. I think the costs dictate here and that three is what is needed in the community.

MR. HOWARD: One of the mayors told me in Atlanta that he was all for a joint facility for the three of them.

A week later when he came back to Savannah he changed his mind. He didn't trust the big city.

Now, that is one thing that happened.

Mr. Gaudry, would you like to make some remarks on that?

MR. GAUDRY: Mr. Chairman, what Mr. Howard says is factual in a way, but I would for the record like to clarify the fact that the city of Savannah offered to buy the service from either Port Wentworth or Garden City, enter a joint contract with Port Wentworth and Garden City, in reference to the Travis Field Plant which is and will be a city-owned-and-operated facility. That is now in the city limits -- Travis Field -- and we did work many, many weeks trying to work out an agreement where Savannah could either buy this service from one of the two municipalities, enter into a three-way or even a two-way commitment. But this was not acceptable to the city governments of Port Wentworth and Garden City. We, the larger city, were willing to go either way, and I would like that made very clear for the record, please.

MR. STEIN: Are there any further comments or questions? It seems to me that we are on the typical municipal suburban problem. The only thing I can say to you people is that if you think it is any different here than anywhere else in the country you are mistaken. But this notion about the core city like Savannah agreeing to buy sewer service or waste treatment service from a satellite community or a suburb may be all right as an approach. But we know that has never happened; that if we are going to have it, we are going to come up with two kinds of operations: either the core city is going to run it and the suburban communities are going to sign contracts with it and not the other way around, or else you are going to set up a municipal system and a metropolitan system where both the core city and the suburban communities have representation on the board of trustees or board of directors, as you will.

Now, I guess you have made your decision here, but the problem is the same all over the country. More and more we find that the satellite communities are very reluctant to just sign contracts with the core cities and let them manage their waste treatment without a choice in the future direction, and they want an opportunity to appear on the board. Sometimes this works out and sometimes it doesn't.

I think the Federal function here is to say: if you have made your decision lately this is fine as long as you keep the river clean. We are not going to get into this except to be all sure that the net result is going to result in clean waters.

Do we have any further questions? Thank you. Mr. Howard.

MR. HOWARD: Mr. Chairman, I would like to present now Mr. J. L. Ledbetter, Director of our Water Quality Survey, who will speak on the quality of the Savannah Estuary at this time, and also on the pollution load now going through the estuary. Leonard.

STATEMENT OF J. L. LEDBETTER, DIRECTOR OF WATER QUALITY SURVEYS, GEORGIA WATER QUALITY CONTROL BOARD, ATLANTA, GEORGIA

MR. LEDBETTER: Thank you, Mr. Howard.

Mr. Chairman, I am J. L. Ledbetter, Director of Water Quality Surveys for the Georgia Water Quality Control Board.

Phase I of the Savannah area pollution abatement program had been scheduled for completion by the end of 1967; consequently, a water quality monitoring program was initiated by the Georgia Water Quality Control Board in early 1968. This program was developed cooperatively with the Savannah District, Corps of Engineers, and the Chatham County Health Department. Monthly samples have been obtained and analyzed during 1968 and 1969. Samples have been collected from two depths from the same sampling points used during the August 1963 survey by the U. S. Public Health Service from River Mile S-2 to River Mile S-22.

Parameters evaluated have included pH, alkalinity, temperature, dissolved oxygen, BOD, color, chlorides, suspended solids, turbidity, conductivity, and fecal coliform. Tidal data have been correlated with the laboratory results to permit interpretation.

Evaluations revealed low dissolved oxygen concentrations in the vicinity of Fort Jackson. Subsequently, an automatic multiparameter water quality monitor was installed there. The Fort Jackson monitor is a joint project of the Federal Water Pollution Control Administration; the Savannah District, Corps of Engineers; and the Georgia Water Quality Control Board. Only a limited amount of data is available from the monitor since the installation was completed recently.

Special studies of a more comprehensive nature were conducted by the Georgia Water Quality Control Board's staff during August 1968, May 1969, and October 1969. These investigations included sampling of the Savannah River, Back River, South Channel, and Wilmington River; and the evaluation of existing wastewater treatment facilities in the

Savannah area.

The industrial wastewater treatment facilities were evaluated by the Georgia Water Quality Control Board's staff during the first week of October 1969. From these investigations, it was established that approximately 137,500 pounds of BOD_5 per day are discharged to the Savannah River from the industries cited as major polluters in the 1964 Federal Report. An additional 22,500 pounds of BOD_5 per day are contributed to the Savannah River by the city of Savannah and other communities in the area. Consequently, the total contribution today to the Savannah River from the Savannah area has a population equivalent (P.E.) of approximately 940,000. This does not include any estimate for any demand on the oxygen resources of the estuary by the American Cyanamid Company's waste discharge.

A voluminous quantity of water quality data has been compiled over the past two years, but time does not permit a detailed presentation. Instead, a summary of the information will be compared to the results presented in the 1964 Federal Report. Since the mass of poor quality water moves either upstream or downstream of Fort Jackson in response to tidal fluctuations, data from sampling stations in that area will be compared.

(Comparison tables follow.)

TABLE I
COMPARISON OF D.O. DATA

STATION	AUGUST 1963			AUGUST 1968*			AUGUST 25, 1969**
	Avg.	Max.	Min.	Avg.	Max.	Min.	
S-5	2.8	5.0	1.1	2.5	3.9	1.7	2.1
S-10	1.8	3.6	0.8	1.8	2.3	1.6	2.5
S-14	2.1	4.4	0.8	2.7	4.4	0.6	2.0
S-16	3.0	5.5	1.1	3.7	5.0	1.2	2.7

* Eight samples @ 3 ft. depth over two-week period
** Samples obtained during low-water slack

TABLE II
COMPARISON OF FECAL COLIFORM DATA

STATION	AUGUST 1963			AUGUST 1968*		
	Arith. Avg.	Max.	Min.	Arith. Avg.	Max.	Min.
S-5	780	2,300	130	32,400	240,000	200
S-10	2,900	9,200	330	15,100	34,800	2,300
S-14	10,000	34,800	2,210	31,600	160,000	1,700
S-16	10,350	54,200	1,720	6,000	23,000	2,210

* Eight samples over two-week period -- collected just below surface

It must be emphasized that the stage of the tide and the water temperature significantly alter the dissolved oxygen concentration at any given station for a given time. The average dissolved oxygen concentrations for the surveys of August 1963 and August 1968 indicate that the sag occurs in the vicinity of Station S-10. However, the continuous record of the Fort Jackson monitor and individual samples taken at low-water slack at different stations and on different dates show that the sag may occur anywhere between Station S-5 and S-16. Preliminary results from the Fort

Jackson monitor reveal that under certain conditions of tide and temperature the dissolved oxygen concentration reaches a low of less than 1.0 mg/l.

From the vicinity of Fort Jackson downstream into South Channel and Wilmington River, pH values of 3.0 to 4.0 are often found because of the sulfuric acid in American Cyanamid's waste. Field investigations have indicated that most of the acid waste enters South Channel and Wilmington River as it is usually released on ebb tide.

Low salinities, high velocities, high turbidities, navigation, and dredging of the harbor, as well as the pollution, prevent utilization of the harbor reach of the Savannah River for fishing, shellfish harvesting, and water contact sports. However, other areas of intrastate and interstate waters are extensively used by the people in the Chatham County-Savannah area.

The Georgia Water Quality Control Board recognized the need for studies of these waters. In 1966, Mr. John M. Henderson was retained as a consultant to evaluate the recreational waters of Chatham County. After reviewing his report, a comprehensive monitoring program was developed jointly with the Chatham County Health Department. Through the efforts of this program, sources of man-made pollution were better defined and in some cases eliminated. Subsequent coordination with the State Health Department permitted 1,000 acres of shellfish waters to be opened for commercial fishermen in the Savannah Estuary in 1968. Approximately 750 additional acres have recently been opened for the 1969 season.

The reference to these waters at this time is to emphasize that a high percentage of the waters in Chatham County is of good quality. While it is recognized that the Lower Savannah River is severely polluted, the record should show that large bodies of water are suitable for beneficial uses such as shellfish harvesting and water contact sports. Plans for the future by the local communities and the State Water Quality Control Board will provide continued protection of these waters.

MR. STEIN: Thank you.

Any comments or questions?

Mr. Ledbetter, when did you indicate that one part per million of oxygen was found below Savannah?

MR. LEDBETTER: Do you mean recently?

MR. STEIN: In your study. You referred to one milligram per liter, which I understand is the same as one part per million, isn't that about right?

MR. LEDBETTER: Yes, sir.

MR. STEIN: Where was that occurring?

MR. LEDBETTER: Well, it occurs in the vicinity of Fort Jackson which would be River Mile 12.

MR. STEIN: About how far is that below Savannah?

MR. LEDBETTER: It is about three, four miles.

MR. STEIN: And how far down --

MR. THOMAN: About a mile below the city limit, isn't it?

MR. LEDBETTER: Well, I am really thinking about the downtown area.

MR. STEIN: And how far down river does this extend?

MR. LEDBETTER: Well, we have measured low dissolved oxygen less than two milligrams per liter down at S-5, which would be River Mile 5, and the downtown part of the city would be River Mile 15, so that is about 10 miles down.

MR. STEIN: About a 10-mile slug of low dissolved oxygen.

MR. LEDBETTER: No, sir, the slug is not that long, but it moves; the point I was making about the tidal fluctuation.

MR. STEIN: How long is the slug? But it covers a 10-mile movement up and down?

MR. LEDBETTER: Yes, sir.

MR. STEIN: As you know, when Mr. Howard referred earlier to "Who killed Lake Erie?" we don't get these conditions in Lake Erie. When some people talk about this as an induatrial river, that can be open to dispute. When you get oxygen levels this low, going 10 miles up and down below a major city like this, I think this may call for a real hard look at the BOD load in the river.

MR. THOMAN: Mr. Ledbetter, I believe on your bacterial criteria, this indicates that the standards are in violation 100 percent at the time that you made measurements.

MR. LEDBETTER: Once again, Mr. Thoman, it would depend on the stage of the tide that we get some of these samples. But I wouldn't say a 100 percent, but let's say a high percentage of the time, yes, sir.

MR. THOMAN: I think most of the figures you cited exceed 100 per 100 ml on the industrial classification and even at S-5 they were well above the 5,000 for 100 ml.

MR. LEDBETTER: That is correct.

MR. THOMAN: This would be in violation of the standards then.

Did I also understand you to say that in the vicinity of American Cyanamid there were very low pHs during most of the measurements that you made?

MR. LEDBETTER: Right below the company, during the period of time that they released sulfuric acid waste. They usually release the acid waste on ebb tide, so there are periods of time when you do not find these lower pH values there.

MR. THOMAN: But it got as low as three?

MR. LEDBETTER: Yes, sir.

MR. THOMAN: But how far would that extend down the river?

MR. LEDBETTER: Well, we found those values, I think, about half a mile. But, as I stated in here, we feel that a high percentage of this waste moves into South Channel in the Savannah River, because they are located on the south side of the river, and it tends to sweep into the South Channel on the ebb tide.

MR. THOMAN: Thank you very much.

MR. STEIN: Any other questions or comments?

MR. HOWARD: Mr. Chairman, I think you understand that we have made some accomplishments, and we think that we have got a better picture of what the extent of the pollution is now than what we had in 1965.

On the other hand, I am sorry to say that we are going to have to arrive at some very painful conclusions which I have listed here. First, our industrial waste treatment facilities discharging to the Lower Savannah River must be significantly upgraded, if we are to provide and maintain the water quality needed to protect the estuary for established beneficial uses and provide for future industrial expansion and population growth.

Secondly, it is extremely doubtful that all municipalities cited at the 1965 conference will complete adequate sewage treatment facilities by the end of 1970.

Third, there should be a reappraisal of previously established abatement schedules and a more meaningful timetable should be adopted for completion of the pollution control program.

That completes our statement, unless there are some questions you would like to ask.

MR. STEIN: Your point is well taken.

I would like to say for myself and I hope for the other Federal people here, although we haven't heard from South Carolina yet, you people in Georgia made an excellent presentation on the factual situation in the river and the status of pollution control.

Again, I would like to point out that this is a significant advance if you look at the whole total picture of Federal-State relations in pollution control.

R. S. Howard, Jr.

I think Mr. Thoman and myself have been around since the beginning in about 1948 when the first Federal law was passed; and Mr. Howard was in an allied program so that he was around, too; and so was Mr. Linton.

For one reason or another a good many of these reports that we have had have been Federal reports. There may be degrees of difference one way or the other. Or at best they have been joint Federal and State reports.

The primary rights and responsibilities of pollution control rest with the State. The State of Georgia has made a presentation which I think we can all rely on, and we show how far we have come and what an excellent State, in the terms of the art and administration and operations, the Georgia program is.

I think this is something which should be commended and cannot be praised too highly. A lot of States speak about State's rights but they forget about State responsibilities.

We have had an indication here that Mr. Howard and his staff have accepted State responsibilities as well as State rights, and I am delighted to see him do that.

Now, I just have one question: If we are going to have possibly a realistic reappraisal, then we certainly should consider the time schedules, and I think we have gotten a pretty clear picture.

Can we have an indication from you at least in terms of the kind of treatment you are asking for, for the municipalities and the industries? As I understand it, the municipalities you talked about are asking for secondary treatment, which means a 90 percent reduction in BOD and year-round chlorination of the effluent. That I can understand.

In terms of organic loading from industry, what kind of BOD reduction are you talking about?

MR. HOWARD: Well, as you know, our basic requirement in Georgia is for secondary treatment of all wastes or equivalent secondary treatment insofar as you can make it equivalent. You also know that we have adopted certain effluent standards and classifications, and receiving water standards. We are thinking in terms of secondary treatment for our industries, of course, but we are not making any arbitrary judgment on this now. Actually we have had a number of meetings at which we have reviewed voluminous data that we cannot go into now, but we will be glad to with your technicians or with the South Carolina people or anybody else. But we are really convinced that we cannot have anything less than secondary treatment and five-day BOD reduction of around 85 percent.

Now, we know that this estuary doesn't behave in a straight-line function like some of our rivers, or like the Savannah River would be upstream, you know. We know that we have got a proposition with complicated factors involving the tides and winds in the estuary. We know that any kind of formula we make would not apply really. But just based on our own monitoring data and a study of our special survey, we feel like if we are going to provide good quality water -- we are going to provide some margin of safety for industrial expansion on the river, and we are going to protect our downstream usage -- beneficial usage -- we are going to have to have secondary treatment right about 85 percent.

MR. THOMAN: Mr. Howard, this may be more appropriate for the Executive Session which we will have shortly, but what, in terms of oxygen-demanding removals, would you be expecting from American Cyanamid?

MR. HOWARD: Well, it is a special case, and we are working with American Cyanamid. We intend to be reasonable, but we will expect a similar contribution as to oxygen reduction demand, that we will be asking from our other industries. It is a special situation. We are not even sure exactly about the reaction, the time involved in it, and so forth.

But they have accepted responsibility; they have recognized there is a problem of chemical oxygen demand at least. So we are going to try to resolve that problem with them within the near future.

MR. STEIN: Well, I think your statement on terms of what you mean by secondary treatment coincides with a letter that was sent out by the Department of Interior recently, talking in terms of considering 85 percent BOD reduction, without regard for the other factors, as secondary treatment.

Now, again, I think we all recognize that when we are dealing with the concept of secondary treatment -- whatever that term means, and to me it just means a biological type of treatment after primary -- this term is traditionally used to apply to municipal waste treatment and you have to use it judiciously in dealing with every industry. But where an industry has an organic waste -- and it seems to me some of the major industries we heard from here today have organic wastes -- this can be pretty directly applied, if this is what we mean.

The reason I raise this is because if we are going to talk in terms of time schedules, obviously you cannot have a meaningful time schedule or set one up until you have some idea what kind of treatment you are going to ask for, because the time schedule is dependent on the treatment.

Now, are there any other questions, or could we call on Mr. Linton now?

Mr. Linton.

STATEMENT OF W. T. LINTON, DIRECTOR,
SOUTH CAROLINA POLLUTION CONTROL
AUTHORITY, COLUMBIA, SOUTH CAROLINA

MR. LINTON: Mr. Chairman, distinguished guests, and ladies and gentlemen. My name is W. T. Linton, and I am Director of the Pollution Control Authority of the State of South Carolina.

I wish to indicate that that name embraces both air and water, and we are no longer known as the Water Pollution Control Authority of South Carolina; we are known simply as the Pollution Control Authority of that magnificent State controlling both air and water.

W. T. Linton

I would like to indicate, too, that my conception of the advisability of this is indicated by reason of the fact that you cannot separate air and water pollution and the controls associated therewith. That is just an aside. You need not take this into account when we are rendering our opinion.

I would like, Mr. Chairman, to indicate that the original information submitted at the February 2, 1965, conference insofar as South Carolina's presentation was concerned, is essentially unchanged or modified by the economic alterations which have occurred since that time.

I would like to indicate also that this statement included presentations by Mr. Somers Pringle, Dr. G. Robert Lunz, and -- if I may be so presumtuous -- Mr. J. David Clem of the U.S. Public Health Service, which now is the Food Protection Section, Division of Environmental Engineering and Food Protection.

I would ask you, Mr. Chairman, to have that information included in the report that will be made, and to say, again, as I said before, as to the man who made an inspection of an operation leading to the construction of a ship:

When he asked the man who was bradding a rivet what he was doing, he said, "I am bradding a rivet."

when he asked the man who was welding a seam what he was doing, the man said, "I am welding a seam."

When he asked the man who was sweeping up the debris from this and other operations what he was doing, he said, "Sir, I am building a ship."

Gentlemen, if this ship is to float, industry, municipalities, government have got to go hand-in-hand down the road or we are going to sink for sure.

So my indication to you gentlemen would be: Let's all get together and assume the appropriate responsibilities that are incumbent on us as honorable American citizens. We can do nothing other than be fair to our progeny, and I am sure that the gentlemen and ladies here will assume the appropriate and proper proportion in connection with the performance of that obligation.

Thank you, Mr. Chairman.

MR. STEIN: Thank you, Mr. Linton, for that statement.

That material, without objection, will be included in the record.

(The documents referred to in Mr. Linton's statement follow.) Page references to printed Proceedings of first session of conference are as follows:

Name	Page References
Somers B. Pringle	90 through 95
G. Robert Lunz	97 through 105 f
J. David Clem	77 through 84

COMMENTS ON THE CLOSED (NOT APPROVED)
OYSTER BEARING AREA IN THE SAVANNAH RIVER BASIN AREA.

By: Somers B. Pringle, Chief of the Shellfish Section,
Division of Sanitary Engineering, South Carolina State
Board of Health and Administrator Beaufort - Jasper
Counties, South Carolina

The Shellfish Section was not designated as a separate section of the Division of Sanitary Engineering until August 1957, prior to that time, it was a segment of the Milk and Food Section. During the late 1920's and early 1930's, some bacteriological analyses of oyster bearing waters were performed (Weston & Weston) due to the Typhoid outbreak in Chicago, about 1925-1926, which (I assume) laid at the door of raw shucked oysters.

From data gathered at that time (records which are not now available) the area southward of the Daufuskie Island landing was closed to commercial gathering of oysters. Spot check sampling of oyster bearing waters in 1946, showed apparently, no further change in the polluted area. In 1957, spot checks to determine if the pollution had increased of progress further into open areas, now put the upper limits of the polluted area at the northern entrance of Ramshorn Creek.

The fact that the area of tidal waters, as shown in red on the submitted section of C. & G.S. Chart 1240, was polluted with a median of more than 70 per ML, was accepted.

In view of the fact, that in 1959-1960, it became necessary under the Shellfish Program to prove all open or approved waters were within limits of a median lower than 70 per ML, all closed areas were regarded as dis-approved and laboratory effort were so concentrated.

During May 1963, a series of five samples were collected at the stations (section 19) #1 through #20, as designated on the chart and median results are listed on Page "A", included in this report.

During the spring of 1964, float test were made from Bloody Point in Calibogue Sound, to gain some knowledge as to how up stream the flood tidal flow, would penetrate into May River and Skull Creek, this is shown on the chart by red arrowed line, the blue lines showing leased oyster beds in the area of the flood flow that could be affected, should the area of pollution increase from return waters at the mouth of Calibogue Sound.

The Shellfish Section of South Carolina has constantly been fearful of the possibility of a break through across the marsches North of Fields Cut into the upper reaches of Wright and New River, as shown by curved red arrowed line. During January 1965, a series of three samples were collected at all stations in Section 19 and the results of these analyses are shown on Page "B" of this report, a hasty conclusion might assume that some break through had occurred around stations #13, 14, 15, and 16.

The Shellfish Section, has no jurisdiction in the economics involved or the knowledge thereof, this being within the premise of the Division of Commercial Fisheries, however, each and every mile or additional miles of closed area, places a heavy burden on the Section to patrol in order to prevent polluted shellfish from endangering the health of the Citizens of the United States.

PAGE "A"

Section of 19, area as shown on portion of C. & G.S. Chart 1240.

STATION	DATE	MEDIAN
1	Less than 70 - 100 ML	
2	9.1	
3	43	
4	9.1	
5	9.1	
6	15	
7	7.3	
8	3.6	
9	9.1	
10	3.6	
11	6.0	red water
12	23	red water
14	150	
15	93	
16	75	
17	460	
18	1100 plus Fields Cut	
19	240	
20	210	

PAGE "B"

Section 19, areas as Shown on portion of C. G.S. Chart 1240

STATION	DATE		
	1/9/65 100 per ML	1/12/65	1/13/65
11	23	23	23
12	20	43	7.2
13	240	43	93
14	240	75	240
15	93	93	240
16	150	93	93
16A	43	23	460
17	1100 plus	460	150
17A	1100 plus	93	150 Docks
18		1100 plus	1100 plus
19		1100 plus	460
20	240	1100	460

COMMENTS ON THE POLLUTION OF SOUTH CAROLINA MARINE WATERS IN THE SAVANNAH RIVER BASIN AREA.

By: G. Robert Lunz, Director South Carolina Wild-
life Resources Department, Bears Bluff Laboratories
and Division of Commercial Fisheries.

Potential value of polluted oyster grounds.

The oyster grounds in the Wright River, New River, Ramshorn Creek, and in the vicinity of Turtle Island and Daufuskie Island, have long been closed to commercial oystering because of pollution allegedly emanating from the Savannah River. There are no records at Bears Bluff Laboratories or at the Division of Commercial Fisheries to show just when this area was first closed to oystering by the South Carolina Board of Health. Doubtless the State Board of Health will testify as to this date. From memory commercial oystering was prohibited in Wright River, New River and Ramshorn Creek at least as early as 1948.

"An Investigation of the Coast Waters of South Carolina with Reference to Oyster Culture" by John D. Battle, published in the Bulletin of the U.S. Fish Commission, Vol. 10, for 1890, reports on a study made on parts of the South Carolina portion of the Savannah River Basin. The report comments on the great amount of mud in suspension in the waters of the Wright River and New River received from the Savannah River. Despite this, the report notes the findings of large deep shell oysters in good condition growing subtidally in the area, and also notes that oyster boats were tonging similar oysters in deep water there. Hearsay evidence indicates that in the late 1800s a large oyster plant was situated on Daufuskie Island which employed more than 100 persons. Some of these oysters used in this plant came from the Wright River and Ramshorn Creek.

A brief survey of the area made in August 1959 by a staff member of Bears Bluff Laboratories, showed that the intertidal oysters were in rather poor condition, with a high mortality rate, and quite sparse. No evidence of cultivation or shell planting was observed, and the estimate was that the entire population including all sizes was probably less than 8,000 bushels of oysters in this area at that time.

Subsequently, the Division of Commercial Fisheries encouraged the movement of oysters from polluted areas for relaying, and fairly large quantities of hitherto wasted oysters were removed from the Santee River. None was knowingly removed from the Wright River, New River, or any of the polluted areas adjacent to the Savannah River. The success, from the oystermen's point of view, of the Santee River movement encouraged leasing of the South Carolina portion of the Savannah River Basin.

Sixty-three and six tenth acres of oyster lands were leased in this area. (See map in appendix). However, in 1962, the South Carolina State Board of Health found it was unable to properly supervise the relaying of oysters, and the practice was discontinued in the State. The oyster lease in the New and Wright Rivers was abandoned.

Because over the years the area was not properly cultivated by oystermen due to pollution, the productivity has been reduced. Based on the average production of other leased beds in unpolluted areas in the State of South Carolina, the 63.3 acre lease would ordinarily have produced between 6,000 and 8,000 South Carolina bushels annually. The South Carolina bushel is 89.3 per cent larger than a U. S. standard bushel measure. The present price of seed oysters is not known, but seed oysters such as could normally have been produced in the New and Wright Rivers two years ago, were worth about 68 cents a South Carolina bushel f.o.b. the oyster beds. Thus, the seed oysters which could have been grown and marketed from the area if it were unpolluted would have been worth between $4,000 and $5,000 annually to the lease holder.

No information is presently available as to the quantity or quality of the subtidal oysters in the Wright and New Rivers. This class of oysters would, of course, be much more valuable. South Carolina leases do not include subtidal oysters. Leases extend only to 1 foot below low water mark.

If the Wright and New Rivers could be declared suitable waters for the cultivation of oysters, the State could again lease the 60-odd acres. With proper management and planting practices this acreage would certainly be increased. The return to the oyster industry, and to the State in the form of direct rentals and taxes, would be significant.

If these oyster grounds had not been polluted and had been continously open since their closure in 1948 (assuming no change in price structure) South Carolina oystermen would have harvested $64,000 to $90,000 worth of oysters.

Pollution Extended and Value

Dye studies in the South Carolina portion of the Savannah River Basin * indicate the possibility of pollution spreading beyond the closed area into the Cooper River and Calibogue Sound. If this were to happen, over 400 acres of oyster grounds, comprising parts of seven oyster leases presumably would be closed. As small as this 400 acres is, this would represent about 6 per cent of all the total leased acreage in the State of South Carolina. Based on general knowledge of this State's oyster production a conservative estimate of the volume of oysters which could be taken from this area would be in the vicinity of 50,000 bushels annually. The ex-vessel price of these oysters, because of their generally good quality, would be $1.00 a bushel. Thus, the spread of pollution into the Cooper River and Calibogue Sound would probably curtail the monetary return to oystermen leasing the areas by $50,000. In ordinary broad calculations of fisheries value, ex-vessel price can be multiplied by 3 to give the wholesale value of a fishery resource. Thus the present closed areas, plus additional areas if pollution follows the dye test indications, would cost the

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*"Report on Pollution of Interstate Waters of the Mouth of the Savannah River, Georgia - South Carolina" by the U. S. Department of Health, Education, and Welfare, Public Health Service, dated November 1[illegible].

lower part of coastal South Carolina some $130,000 annually. These estimates of value are confirmed by Fisheries Statistics of the United States, 1962, Statistical Digest No. 56, U.S. Department of the Interior, Fish and Wildlife Service, Bureau of Commercial Fisheries, which gives the ex-vessel price of South Carolina oysters as being $1,168,000 for all the oysters produced in the State. In this State practically all oysters are produced on bottoms leased from the State. There are 7,000 acres under lease. Thus each acre nets an annual ex-vessel return of $167. The 460 odd acres in the Savannah River Basin on the South Carolina side which are already polluted or are threatened with pollution then produce about $76,820 annually, ex-vessel price or $220,000 wholesale value. This value is not greatly different from the more conservative figure given above and obtained by different calculations.

In the Fisheries Resources of the United States, Senate Document No. 51, 79th Congress, published in 1954, in arriving at the total capitalization value of fisheries resources the author takes the value of the fisheries and calculates how much money invested at 4 per cent per annum would be required to yield this value. Following that formula, the presently polluted area has an investment value to the State of South Carolina of between $450,000 to $600,000. If the pollution spreads, as indicated by dye studies, the investment value would approach $5,000,000.

Shad Fishery in the Savannah River

The Public Health Service report mentioned above, dated November 1964 notes on page 12 that the Savannah River no longer supports a shad fishery. This seems to be an error. Although the Division of Commercial Fisheries does not have landing statistics for the shad from the South Carolina side of the Savannah River, licenses were issued for 64 gill nets to be used in the Savannah River during the shad season of 1964. No doubt, with accurate information available, the shad fishery in the Savannah River Basin would show a decline during the past 60 or more years, but the State of South Carolina does not have information which would support the statement made by the Public Health Service on page 12 of its report that the Savannah River no longer supports a shad fishery.

Information for Further Study Available

Since 1953, Bears Bluff Laboratories has been keeping a continuous inventory of the fishes, crabs and shrimps throughout the greater part of South Carolina by monthly (and often more frequent) experimental tows with an otter trawl. Additionally, but by the same methods, rather extensive work was done in the Calibogue Sound in 1957 and 1958. In the regular state wide survey, two of the stations were in the areas which can be included in the Savannah River Basin. One of these, designated as "Bloody Point," is located between the mouth of Calibogue Sound and Tybee Roads, a few miles offshore of Daufuskie and Turtle Islands. The other is located in the upper end of Calibogue near a marsh island across from Bram Point. At these two stations, since 1953, considerable data has been accumulated. Specimen data sheets with the type of information on file at Bears Bluff Laboratories are attached in the Appendix.

Unfortunately, the Laboratories has neither the personnel nor the appropriations to make a special study of this long-time inventory. If this were possible, and these data were compared with similar information available for unpolluted areas with comparable hydrographic conditions in the State of South Carolina, more definite information might be obtained on the effect of pollution from the Savannah River on South Carolina fisheries.

January 28, 1965

Drag: # 2 Location: Bloody Point Net: 20' Flat Date: July 29, 1964

Net Over: 4:13P.M. Net Up: 4:33P.M. Bottom: Mxsand Water Depth: 12-18' Tide: Low Ebb Air Temp: 29.0°C Water Temp: S. 28.5°C B. 28.0°C

Surface Salinity: 21.1°/oo

Bottom Salinity: 22.9°/oo Turbidity: Mod.High Wind: S E 10-20mph (——) Sea: Choppy Weather: Overcast

Speed 700 rpm. With/ ~~Against/~~ ~~No/~~ Tide ~~Up/~~ ~~Down/~~ ~~Creek~~ Seaward/ ~~Landward/~~ ~~Coastwise~~

COMMERCIAL FISH

Size in inches

Species	0-3		3-6		6-9		9-11		Over Size			Illegal		Legal		Size with Roe		
	No.	Oz.	No.	Oz.	No.	Oz.	No.	Oz.	No.		Oz.	No.	Oz.	No.	Oz.	No.	Min.	Max.
Trout Spotted																		
Trout Other C. regalis	10	1½	82	23								93	24½					
Whiting			25	29	3	12	2	11½				28	41	2	11½			
Croaker			160	47½	9	21						160	47½	9	21			
Spot			30	16½	1	3						30	16½	1	3			
S. Fluke																		
N. Fluke			1	1¼								1	1¼					

NON-COMMERCIAL FISH

Species	No.	Size Min.	Max.	Dom.	Ounces
Anchovy	8	1¾	2¼	1¾	
Banded Croaker					
Cat fish					
Cutlass fish					
Rays D. americana	1	9¼	(1	♂)	
Sea Robin, Sl.	95	3½	4¼	4	
Star Drum	70	2¼	3	2¾	
Yellow tail					
C. striatus	4	4½	5¼	4¾	

Wt. trash fish = 8 lbs., 8 oz.

Species	No.	Size Min.	Max.	Dom.	Ounces
Chilomycterus schoepfi	3	1⅛	2	1½	
Opisthonema o. oglinum	1	4¾			
Sphoeroides maculatus	1	2½			
Stephanolepis hispidus	1	3⅛			
Orthopristis chrysopterus	12	4⅛	5	4½	
O. Fluke	1	5			
Hog choker					
P. evolans	7	2½	3½	2¾	
Tongue fish	12	5	5½	5¼	
Whiffs					

Perlowe-14784—7-64.

BEARS BLUFF LABORATORIES—WADMALAW ISLAND, S. C.

Drg: # 2

Bloody Point

Date July 29, 1964

SHRIMP

P. setiferus

Size Inch	No.	Totals Ounces H. off	Count
2-3			
3-4			
4-4.5			
4.5-5			
5-6			
6-7			
7-8			
Sum			

..........oz. Sample/Entire Catch/Used.

Total Catch: H. off..........lb. ....oz. F..........

P. aztecus

Size Inch	No.	Totals Ounces H. off	Count
2-3			
3-4			
4-4.5			
4.5-5	4	1	
5-6	49	20¼	
6-7	8	5	
7-8			
Sum	61	26¼	

40 oz. Sample/Entire Catch/Used.

Total Catch: H. off 1 lb. 10¼ oz. F 1

P. duorarum

Size Inch	No.	Totals Ounces H. off	Count

..........oz. Sample/Entire Catch/Used.

Total Catch: H. off..........lb. ....oz. F..........

CRABS

C. sapidus

	0-1	1-2	2-3	3-4	4-5	No. 5 & over	Dom Size 5 & over	No. Totals	Ounces Totals
Immature Males									
Immature Females					1			1	4
Mature Males						5	6¼	5	32
Mature Females						11	5¼	11	63
Sponged						13	6	13	95

T.L., mms.

C. regalis: 90,108,105,114,111,114,120,83,125,75.

Spot: 117,123,135,115,135,137,140,155.

Menticirrhus americanus: 228,232,260,268.

Croaker: 105,113,113,123,115,115,117,115,112, 114,123,127,130,138,142,157,174.

Northern Fluke: 157

Star Drum: 62,64,68,70,68,69,87.

Orthopristis chrysopterus: 104,104,107,109,112,113,113,118, 122,125,127.

Prionotus scitulus scitulus: 100-105 dom. (90%)

BEARS BLUFF LABORATORIES—WADMALAW ISLAND, S. C.

Burleigh-14766—5-64.

NATIONAL SHELLFISH SANITATION PROGRAM
STATEMENT OF INTEREST

by
J. David Clem
Regional Shellfish Sanitation Consultant
Division of Environmental Engineering and
Food Protection
Public Health Service
Atlanta, Georgia

Statement Presented before the Conference on the Pollution of Interstate Waters of the Mouth of the Savannah River, Georgia -- South Carolina, February 2, 1965.

My name is David Clem. I am a sanitary engineer and Regional Shellfish Sanitation Consultant, Division of Environmental Engineering and Food Protection, Public Health Service. The statement I wish to present concerns the interest the National Shellfish Sanitation Program has for harvesting of oysters, clams and mussels from clean waters and the prevention and abatement of water pollution. Georgia and South Carolina, along with 21 other States, the shellfish industry, Canada, Japan, and the Public Health Service are all participants in this program.

The principles and procedures of this program were developed 40 years ago because of a large outbreak of typhoid fever caused by eating infected oysters which were sold in seven States.[1] Today the basic principles of the program remain much the same. A brief look at some of the responsibilities and administrative procedures for the certification of interstate shellfish shippers may provide a better understanding for future discussions.

Each State is held responsible for making sanitary surveys of shellfish growing areas, classifying suitable waters for the direct marketing of shellfish, control of harvesting practices, sanitation of shellfish plants and shippers and their certification. Approved growing areas for the direct marketing of oysters and clams must have a sanitary survey prior to classification. This survey must offer evidence that pathogenic bacteria, radionuclides, pesticides and harmful industrial wastes do not reach approved areas in dangerous concentrations. The median Coliform MPN of the water does not exceed 70 per 100ml and 10 percent of the water does not exceed an MPN of 230 per 100 ml.[2] Standards used in the program have been jointly developed over a long period by the States and the Public Health Service with the co-operation of the shellfish industry.

The Public Health Service annually endorses each State program that meets the recommended standards of the co-operative program. Currently both Georgia and South Carolina are endorsed by the Public Health Service. Twice a month the Public Health Service publishes a list of all certified interstate shellfish shippers.

Historically, shellfish borne outbreaks of typhoid fever and infectious hepatitis due to the consumption of raw shellfish have been caused by some form of water pollution. A severe neurologic disorder among 83 persons was recognized in Japan in 1953. The cause was due to a vinyl chloride plant discharging industrial waste to an estuary. Fish and shellfish eaten by the cases were found to contain toxic amounts of mecury.[3] The sanitary control of the approved growing areas is one of the most important concepts in the program. Likewise the prevention of harvesting oysters from polluted areas is an important control.

Oysters reflect the water quality from which they were harvested. The oyster is an efficient filter feeder concentrat~~ion~~ing particulate matter and other minute consituents from estuarine water. One investigator has observed that some oysters contained up to 3.5 to 4.0 percent zinc while the overlying waters contained not over 0.02ppm.[5] This represents a concentration-retention factor of 175,000 to 1. Microbiological organisms are accumulated in a similar way as shown in Table 1.

TABLE I. Level of Water Coliforms to Oyster (*Crassostrea virginica*) Coliforms.

Location	Water Coliform Median MPN/100ml.	Oyster Coliform Median MPN/100 ~~ml.~~ mg.
Apalachicola Bay,* Florida	25	380
Bon Secour Bay,* Alabama	5.9	130
Mississippi Sound,* Mississippi	190	1,000
do	43	540
Massachusetts** (laboratory)	20	130
do	70	450
do	700	4,700

* Reference No. 6

** Reference No. 7

Because of the propensity of oysters to concentrate organisms and particulate matter from its surrounding waters and because the public continues to enjoy eating the whole animal raw, it is imperative that they be harvested from clean waters.

In the report presented today it is stated that 11,000 acres of coastal waters in the Savannah area are closed to harvesting shellfish. This degradation of water quality has a four fold impact on the shellfish industry and control officials: 1) loss of a natural resource, 2)patrol and jurisdictional difficulties, 3) sanitary surveillance requirements, and 4) sports-harvesting and consumer confidence considerations.

At the 1964 National Shellfish Sanitation Workshop it was reemphasized and unanimously endorsed that shellfish are a renewable, manageable natural resource and that shellfish culture and harvesting represents a beneficial use of estuarine water. The decline of the oyster industry in both Georgia and South Carolina has been quite apparent since 1908. In that year South Carolina produced 7,440,000 pounds of oysters.[*] In 1963 the production had decreased to 3,830,000 pounds of which 51.7 percent was from Beaufort County waters. In the corresponding period, Georgia's production has dropped from 8,070,000 pounds to 235,000 pounds. In 1963 43.3 percent of Georgia's production was from the waters of Chatham County.[4] This decline of the oyster industry may have been due to several factors: pollution, including sedimentation; failure to repopulate; predators; adverse ecological conditions; and a reduced market for the product.

The patrol of waters classified as prohibited is a necessary control function that is a by-product of pollution. Keeping the public and oysterman posted as to where approved waters are located is another responsibility of the States. Surreptitious oyster harvesting from polluted areas must be prevented in order to ensure that a safe product reaches the market. Also troublesome to control officials on interstate waters is the problem of apprehending persons who have harvested oysters from polluted waters in an adjacent State.

The third by-product of pollution is the need for sanitary survellience of waters adjacent to approved waters in order to determine changes in microbiological and chemical concentrations. Sanannah, like other coastal communities, is experiencing a population growth and industrial expansion. The effect of this urbanization as a contributory factor to the closing of the main river channels and a portion of the adjacent tidal waters to shellfish harvesting by the Georgia and South Carolina Health Departments is apparent in the report presented today.

The sportsman who gathers oysters and is not aware of the water quality in this esturary runs the risk of becoming infected or infecting others with typhoid fever, infectious hepatitis, or other enteric disorders. Incidents of this sort cast suspicion even on certified oysters and lowers consumer confidence in the product.

As a spokesman for the co-operative program, I wish to leave you with these points for your consideration: -----that

1) Oysters, clams, and mussels are a renewable, manageable natural resource of significant economic value to many coastal communities.
2) The multiple utilization of estuaries and pollution preventation and abatement programs should recognize

that shellfish culture and harvesting represents a beneficial use of esturaine waters.

3) The National Shellfish Sanitation Program actively encourages water quality programs which will preserve all possible coastal areas for this beneficial use.

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MR. THOMAN: Bill, would you identify exactly what portion of the previous record you would like incorporated by reference?

MR. LINTON: Yes. I would like to do that.

MR. THOMAN: If you would refer to the specific pages.*

MR. LINTON: I want the entire thing included.

MR. STEIN: I think if we need any specifics, we will get them later but I think we can incorporate that by reference into the record.

MR. LINTON: I am sure you can. It just a simple matter of making a reference to it.

MR. THOMAN: It is agreeable with me if it is to Mr. Linton.

MR. LINTON: I want each one of those completely incorporated.

MR. STEIN: It will be done without objection. We are paying for that.

Now, we lost South Carolina once; I don't want to lose them again.

MR. LINTON: You have never lost us. I am going to be on your shirt-tail from now on.

MR. STEIN: You surely are going to pay for it.

Are there any other questions or comments?

*See page 135.

Does anyone else want to make a statement before we go into Executive Session? I think the consensus is we want to have this in public -- the Executive Session. Is this correct?

MR. LINTON: Suits me.

MR. STEIN: Right.

MR. DEUTSCH: My name is Morton Deutsch.

MR. STEIN: Why don't you come up, Mr. Deutsch.

MR. DEUTSCH: You know who I am. Mr. Thoman does.

MR. HOWARD: You haven't written me a letter lately.

STATEMENT OF MORTON DEUTSCH, PRESIDENT,
SURFSIDE DEVELOPMENT CORPORATION,
SAVANNAH, GEORGIA

MR. DEUTSCH: I welcome you to Savannah. I am President of the Surfside Development Corporation with extensive holdings on the Daufuskie Island and on the inland waterways, and I merely want to confirm what Mr. Linton has said: that we have been debarred and deterred from going ahead with contemplated development on Daufuskie Island because of the contamination of the waters, and I was very much impressed when you were talking about American Cyanamid Corporation. I don't know if it still is the situation, but it has been the situation in the past that you would come out to Daufuskie Island and go to town and the river was as clear as it could be. You would come back up in the vicinity of Daufuskie and the river would be -- in front of American Cyanamid and by Range Light 47 -- and you would find that river filled with floating dead fish.

I agree with Mr. Linton that the only way to get this thing going is not to obstruct but to join hand-in-hand.

We are building for tomorrow. Savannah cannot take any more industry today because the oxygen content in the Savannah River is exhausted.

I am looking at you, Mr. Gaudry. Get on the ball, and let's go forward. I want to shake your hands.

That is all.

(The Executive Session follows.)

Executive Session

MR. STEIN: I just have one more thing to say before we go into Executive Session. In various parts of the country the program is moving forward. From time to time, when other stages of the proceedings have taken place, industries and sometimes communities have pointed out that we -- and I will just speak for the Federal Government here -- filed an action against one possibly and not the other.

Again, we can see the record here. The point is we do have an open session here in which anyone who wishes can make a statement. Certain cities and certain industries have made statements. You may agree or disagree with what the cities or the industries, or the Federal and State representatives have said, but for the Federal and State it is their job.

I think the cities and industries that we have heard today have presented as always their situation and their cases with candor. I, for one, think we have a full record and full explanation. If other cities and other industries don't avail themselves of this opportunity and we don't have the full record, I would hope they would bear in mind when they raise the question of why they might have been selected in some future cases when the industries that came forward and participated here were not.

As I say, you can see the answer very plainly here. I don't want to pick these out, but just let me cite two examples: I think we have had a pretty full disclosure of the city of Savannah's program and problems, and I think we have had a pretty full disclosure of Union Camp's program and point of view, as well as Continental Can.

But, as you know, there have been 64 industries, named by Mr. Howard and his group, and we haven't had detailed explanations from them. Maybe they don't need it, but we certainly have had it from these two, and I would like to commend them.

If you look at any future action and wonder why some people are selected and some people are not, I hope you will bear in mind which companies and which cities have come forward and given explanations at these conferences and which have not.

With that, if no one has anything else to add, we will have the Executive Session. We will try to hold it publicly. Again, I say, when we have an Executive Session in public, we are trying to do what generally is done behind closed doors; and we will just ask you to listen and see how this works.

I would think that we have a relatively straight-forward situation. I think the reason that we have had this is because of the excellent analysis both of the state of the river and the industrial waste survey, and the state of the program done and analyzed and presented to us by Georgia's representatives.

I think this boils down to two situations. If we are thinking in terms of waste disposal, if we can agree on having all municipalities put in secondary treatment — and by secondary for municipalities, do you mean a 90 percent reduction in BOD or 85?

MR. HOWARD: You know there is some situations where they may need more than that.

MR. STEIN: A minimum of 85?

MR. HOWARD: Yes.

MR. STEIN: A minimum of 85 percent reduction of BOD plus chlorination of effluent.

Now, for industrial wastes, I think we can agree on a commensurate program which will be a minimum of 85 percent reduction of BOD and chlorination of the effluent where it is appropriate; and in some cases it may be; in some cases it may not be. With other industries you would have to have a commensurate program worked out on a case-by-case basis.

If we can agree to that, I think possibly also we can agree that the conferees will meet in six months, at which time Georgia will produce a list of all the cities and the industries listed here today, and any others that Georgia deems appropriate.

I don't want to make this exclusive because we know that the last time we found some more. I think with that intensive survey, the likelihood of finding more is getting more and more remote.

Column 1 on the list will indicate what the present waste situation is now. The second item will indicate what will be required to meet the program that I have just indicated, i.e., a program of secondary treatment or its equivalent by the industry; and a series of dates -- and some of these may have been passed -- final dates and interim dates.

One will be completion of preliminary plans; 2) completion of final plans; 3) arrangement of financing and this, of course, may not be applicable to industrial waste sources. Generally, unless it is public financing, it is up to the industry to arrange for financing on its own. Four will be the award of contracts; and 5) the completion of the facility. This will be done with each individual facility.

We have done this in complicated situations like this before -- notably New York, Lake Erie, Lake Michigan and New England. I think this has worked before and will work again because it gives the State flexibility with each one. I know some of the dates that came up here are earlier than others and that some are more complicated than others.

However, I would like to ask your opinion about the outside date for completion on the last one -- no date to be later than X-date. I wonder if we could go ahead with what I have said and possibly work toward that last statement.

MR. HOWARD: The trouble with you, Mr. Chairman, is that you pack up and leave here and I will be left holding the bag down here. If you don't watch out -- if we don't have our schedule, you know, I will have to go through one more administration.

You know in 1965 we did all these things. We set dates, and we tried to agree on certain things with the technical committee, but we didn't get it resolved.

Now, I had to wrestle with one administration for about two years, and then I have been wrestling with another one for about two years, and finally within the last month or two, why the city of Savannah said, "We are going ahead with the program, and when I go back down to Savannah, I am going to tell that SOB up in Atlanta" -- they didn't mention y'all, you see. What I want to get straight here is that we ought to try, I think, to set a target date now for completing the facilities, and basically the degree of treatment required, because, see, I got a big State of 58,000 square miles, with just hundreds of problems all over the place, and I have got to go down and wrestle with the southern Georgia folks, and the northern Georgia folks, and I don't want to have to come back here in six months and decide certain things. Let's decide as many as we can now.

MR. STEIN: I agree with you. I thought I said that.

You know the fellows in Atlanta today are all southern gentlemen. You see they called you an SOB, but they didn't refer to me because their complacency wouldn't let them say what they thought of me.

MR. THOMAN: Rock, further in line with Murray's suggestion on an outside date for everything: Assuming that the city of Savannah, in good faith, moves forward with the schedule that it presently indicated this morning, it would indicate that their facility, or secondary treatment facilities would be in operation by the end of 1972. Would this be a feasible outside date, or do you see any technical bars that would not permit industry to comply by at least that date?

MR. HOWARD: Well, every time they come up with a target date, it reminds me that we started off with this argument about 1965, in February, see?

Now, I really believe if the city took this thing as seriously as I think they should take it, I think they could do it by July 1, 1972, and save themselves a lot of money.

I think we are talking about giving somebody another three years of pollution. Over in South Carolina I think most of our industries could probably get straightened out and get their facilities within 2-1/2 years, if they really made an effort, and it is going to be a problem. We are going to have the same problem. And if you say 3 years, you are going to have the same delay you are going to have if you say 2 or 2-1/2.

MR. STEIN: Mr. Thoman, do you have any objection to this earlier date?

MR. THOMAN: Are you kidding? No, I was just adding up some dates here. The city of Savannah has to award its surcharge contract on that site, and we have it, as Wes said, on the basis of a reputable soils firm, with an international reputation — probably one of the better ones in the United States of America -- that it needs a year's surcharge. If they award that almost immediately and construction starts, it would seem to me that it would be sometime during the spring of 1970 before that job would be completed.

If we go to the year 1971 for the year's completion on that site, and being realistic, the city of Savannah could not be in operation before the end of 1972.

Now, as far as the industries are concerned, where they are not faced with certain of those problems, I think -- I have absolutely no objection -- I think it should be speeded up where at all possible. If it could be done within a year, it should be done. But I am talking about an outside date.

MR. STEIN: What do you think, Mr. Howard?

MR. HOWARD: Well, I have got some things in my craw I want to get out now about that.

This business about the soil conditions, and so forth, should have been recognized a lot longer than it has. They should have found out about that 2 years ago, but all of a sudden, after we go through a certain song and dance, we suddenly come up and the engineers come up and say we have got problems down there. The engineers did recognize it but nothing was done because the city didn't tell them to do it. All of a sudden they get Law Engineering to come up to make some studies. They have known they had to have them all that time if they were going to have that site. I may sound unreasonable, but I just wanted to get it off my chest. But I still think that probably they could do the job in 2-1/2 years if they got with it.

MR. STEIN: Do you think they could not do it in 2-1/2 years?

MR. THOMAN: You mean the city of Savannah?

MR. STEIN: That is right. July 1, 1972.

MR. THOMAN: A lot would depend upon the soil conditions because administering, again, a government contract, I do not want to see a facility built that is going to fall to pieces.

MR. HOWARD: They can find another site as far as that goes.

Let's just talk about these things a little bit.

MR. THOMAN: I agree with you, Rock, completely. They have been dilatory.

MR. STEIN: Now, let me --

MR. HOWARD: They can make a good case -- the city engineers. That isn't the only site they can use.

This thing came about just recently; they found out about this unstable soil condition. But everybody along the river knows they have got unstable soil conditions down there. Union Camp knew about it, too, see.

MR. THOMAN: Mr. Howard, that is not true. They just found out about this recently, because the engineers in my office have been telling me for over 6 months they have had to surcharge that site for a year, and we have known about it that long.

MR. HOWARD: That is why this thing bugs me. About July 1, 1973, you are going to find another reason --

MR. STEIN: That is why I wanted to push these dates back.

When I talked about these 6 months, Mr. Howard, they are not going to lose us from here on. I just want to put this out: whether you people have got the notice or not, in addition to doing this, they have been turning the standards function over to us, and we are going to be working with Mr. Howard directly. If there is a violation of a standard and someone isn't in compliance with this, we are going to call a hearing, and you get a 180-day notice or we go to court. And I am sure not going to wait -- as you know me -- until 1972 or 1973 before we make up our minds whether something is moving or not.

So what I would like to do is get an agreement on the last completion date for the big project which is Savannah, which will take the longest, and that is: there is one proposal here by Mr. Howard of July 1, 1972. Is this agreeable, Mr. Thoman?

MR. THOMAN: Why, yes.

MR. STEIN: Now, if we cannot do that, I would still like, Mr. Howard, if that is the last date, to get from you within 6 months -- and if necessary, we will put some people here to work with you on this -- a list -- so we can run this back -- of interim dates. You wouldn't expect all of the projects to finish and go into operation on July 1, 1972, because that can never happen.

Secondly, that is the last date. I hope wherever possible within 6 months you can come up, project by project, with earlier dates, interim dates and the last date for completion -- interim dates on preliminary plans to be completed, final plans to be completed, financing to be completed, award construction and the completion of the project.

Now, the point is, again: if you cannot do this -- and I am sure Georgia can do it -- and you just come up with the completion date on all these projects, we will just have to make a judgment ourselves on these interim dates on whether they are moving, and I think it will be much better than for the State to do it or forus to do it in cooperation with the State.

MR. HOWARD: Well, we have other towns involved, you know, that have indicated that they were willing to complete their facilities by the end of 1970; maybe some of them by 1971.

But if we -- are we talking about setting a schedule -- one schedule for all of them, or are we talking about individual schedules?

MR. STEIN: Individual schedules. But we are not going to have a completion date later than July 1, 1972, for any of them.

MR. FLOYD: Mr. Chairman.

MR. STEIN: I am sorry, this is the Executive Session. I said you people could look in. We will let you speak later.

You know, again, I ask you to -- we could well be in a private room here, but we are not. We are letting you look and listen.

MR. FLOYD: Mr. Chairman, I just wanted a point of clarification. The engineers this morning and again just now have informed us that it is technically impossible for that date. The date that was mentioned this morning would have been mid-1973. You are taking a year away from the suggested time.

MR. STEIN: All right. When I figured your date this morning -- and for clarification; I am not necessarily answering this -- the date I figured was May 1, 1973; considering we had 2 months to go in this year, 3-1/2 years from now was the date, as I understood the testimony this morning. That was the date that came out.

MR. FLOYD: That is correct, sir. And did I understand you to say that we are now talking July 1, 1972, as opposed to May 1973?

MR. STEIN: That is correct.

MR. HOWARD: I would like to talk about the schedules before we depart. Before you get back to the putrid Potomac, or get involved in Lake Erie, and that sort of thing, I want to settle these dates now on major polluters.

MR. STEIN: Which other ones do you want to take up now?

MR. HOWARD: I thought we were still talking about Savannah.

MR. STEIN: Well, you have the proposals. There is one proposal by the city, May 1, 1973. There was a proposal originally by Mr. Thoman, January 1, 1973. And there was a proposal by the State of Georgia for July 1, 1972.

Now, I am ready to listen to all your proposals.

MR. LINTON: Well, it looks like Rock wants me to express an opinion in connection with this. I have been associated with these problems over a considerable period of time -- some 20 years -- and we have always attempted in every possible way to cooperate with an industry or a municipality that indicated clearly to us that they propose to do something.

Now, I am not in position to render an opinion in connection with what the city of Savannah proposes to do. It appears to me, as a conferee, that the expressions made here have been made in the light of conditions as they exist. And if my conferees will listen and quit talking I would make a --

MR. STEIN: We are listening, Bill. If you can't penetrate our talking --

MR. LINTON: Murray, I can penetrate, but in some instances, the penetration is not as deep as I would like it to be.

MR. STEIN: We are all getting old, Bill.

MR. LINTON: What appears to me to be a logical sequence of consideration here is to take the two dates that have been suggested here and see if there cannot be a compromise settlement between the two.

You gentlemen from Savannah say that you cannot do this work by the time that has been indicated here, July 1, 1972. Then, if you can do it by May 1, 1973, I for one, not having a thing to do with what Savannah does, would entertain — if my conferees are so inclined — some modification or adjustment of those two dates.

Mr. Chairman, that is an off-the-record statement.

MR. STEIN: Well, this is an Executive Session and we will adjust that.

Mr. Howard.

MR. HOWARD: Well, you know the city of Savannah has got about four or five engineering firms involved in this program.

Is that right, Earl? Four or five?

MR. DOBBINS: We have a total of five.

MR. HOWARD: It is going to take a lot of coordination to get the program under way and to make speed with it, and to get the job done satisfactorily.

Now, from time to time, I have talked to some of these engineers, and I get different impressions about the schedules and what they could do and what they couldn't do and what the city is now saying they can do. But I don't mind horse trading. I would be glad to compromise up to, say, at the end of 1972. But it sure bugs me to think about polluting another 3-1/2 years, and to think that we started off with 1965 and we haven't made any more progress than this.

MR. STEIN: Let me try this. I don't want to particularize this with Savannah because its situation isn't that peculiar. As I understand the State's position, and the Federal position, which is the same: the difficulty with an extension of the date and the question here is that the extension of the date is going on for several reasons: 1) there is a question of compacting material on the site, which the belief is should have been recognized quite awhile ago. 2) There was a question of an imposition of a sewer service charge which has not been done, which may have been done awhile ago, and you may have had your views on this.

But I think the issue that the State and Federal people are engaged in is this: that in talking about an extension of a date, if what we are still dealing with is just kicking back and forth in engineering contracts and engineering surveys of the problem without really getting action on the imposition of sewer service charges, the acquisition of sites, or the compacting of ground, and we are just pushing a date back, there is no assurance, as Mr. Howard said, that if we are here 3 years from now, we may not be in the same situation.

I don't care, but I would suggest maybe it is a good idea to compromise this date possibly until the end of the year of 1972, but that we come up in this 6-month's meeting of the conferees, and if we have the situation where the State reports that Savannah has not moved in terms of getting what they consider indicia of real bona fide action toward the completion of the job -- and I think this means more than just engaging engineering firms to go through plans -- we will have to determine what the next step is going to be.

And, gentlemen, we don't have to wait until 1972 or 1973, or even 1971. We have standards for the Savannah River. If this is not going to move and if Rock Howard reports to me the same thing that he reported today, I know what my recommendation would be -- that we really come to grips with this. I think his point is very well taken because we have had the same kind of situation in city after city after city.

Now, whatever you say for the industry, and talk about Union Camp or the Container Corporation -- they have built a plant, and you may not think it is of adequate size, but you have seen it, and they have gone in, and thrown some dirt, and we have had no indication, that is, of the communities here, particularly Savannah, has done this.

I think this is an essential difference, and I think we have to take Mr. Howard's admonitions very, very seriously.

Mr. Howard, did you want to say anything on that?

MR. HOWARD: One more recrimination: We reviewed the Savannah program in January of 1968 with the city. They asked us to do it, and we wrote them a report of our review and made certain recommendations -- made it pretty clear and simple -- and months after that nothing happened. Then I started inquiry, and the next thing you know, we were going to have another review, and we had another review. In essence, the other review took a lot of information in our report and the other engineers' report, and they wrote up another report that cost us $6,000, and now we are at this point. Those kinds of things bother me. That was in January 1968.

Now, that is the reason I feel like we ought to have a realistic schedule; we ought to make a special effort. I think Savannah ought to make a special effort to get the job done.

When you have a bad tooth, you go to the dentist and want to have your tooth pulled. Once you do it, it is all right.

You could possibly save money by moving your schedule up and getting with it.

Every time you have a meeting around Savannah, the old saying is that if you are going to have a meeting around 10:00 o'clock, you might as well get ready for it around 10:30 or 11:00.

All the review did was pat the engineers, and the consultant firms of the city, and pat us on the back, and say: go ahead with the program. And that was a good while ago, but there has been very little go-ahead.

MR. STEIN: Are there any other comments or questions?

Let me try this out. Let's go with the same kind of operation, but let's see if -- take Mr. Linton's proposal. Let's compromise this date to January 1, 1973. Again, we will meet in 6 months, where we will have a detailed list from you on every source -- whether the source is named here municipal or industrial -- about what their situation is now, what you expect from them, when they are completing their preliminary plans, their final plans, financing, the award of contract, and completion date.

In addition to that, we will have at that 6-month's meeting an appraisal by the State agencies of those communities and industries which they believe are not showing bona fide progress, based on the whole record, and the reasons for their judgment.

I suggest we have these meetings at 6-month intervals. If at any one of those meetings the conferees come up with a notion or a conclusion that any industries or municipalities, individually or collectively, have not taken bona fide action to meet these schedules and meet these revised dates, then we will go back to our respective offices and recommend appropriate further action against those industries and municipalities directly.

Now, I know the State of Georgia has that authority, and I know with the standard situation that the Federal Government has that authority. I also do know that Mr. Howard and myself are the key men who make these recommendations both in Georgia and the Federal Government, and I think with that we possibly have moved this as far ahead as we can, if you will buy that other date.

Is that agreeable?

MR. LINTON: I am agreeable with that. I would make it December 31, 1972, rather than January 1, 1973, for obvious reasons.

MR. STEIN: All right. If you want to do that, that is fine.

MR. HOWARD: Mr. Chairman, I know we are not going to have much improvement in the river as far as bacterial contamination is concerned until we get Savannah cleaned up. Everyone knows that. And I want to remind everyone here that we are talking about protecting beaches and swimming areas all over Chatham County as well as in South Carolina. It also involves the program of trying to reopen and develop more shellfish water, and I don't know but what South Carolina isn't being very, very liberal and big about the whole thing if they are going to accept that date.

I am for it. I will go along with that date, and I hope that everybody understands what we are talking about is a matter of public health; it is a matter of adverse effects on the commercial shellfish industry over in South Carolina around Beaufort; and it is also a matter of adverse effects on the resort area over in Calibogue Sound and over in Hilton Head Island, and in the future it may be more serious to us on Tybee Island.

MR. STEIN: Are we in agreement, then, with that? I think we are going to do it.

Now --

MR. THOMAN: One thing: Let the record show that that is the outside date for all municipalities and all industries.

MR. STEIN: Oh, absolutely, that is the last date. And I hope that most of the industries and the municipalities will have an earlier completion date, and I think it was indicated in the presentation of Mr. Howard's staff that earlier dates were contemplated. This doesn't mean an easing up of all dates, and I think the record should show this: that as far as I am concerned, the dates that are going to be established by this process, with the approval of our regional director, will be the dates we are going to use for the enforcement of the standards as well. So I don't think there is any mistake about this.

You know, in the law sometimes, at least under the common law, the way I would summarize this, they used to say, "Every dog is entitled to two bites." And in a tort case if a dog bit you once, you couldn't successfully sue, but if you were bitten once, the second time that dog bit you, and you could show that, you can collect damages.

I think if you are going to have a rough analogy, I think as far as I can see from listening to this today, Savannah has had its first bite. I hope we don't get another one, because we are going to react.

Are there any other comments?

Now, does anyone from the audience feel --

MR. FLOYD: Mr. Chairman.

MR. STEIN: Yes, come on up now.

MR. FLOYD: Gentlemen, I feel -- if you will permit me -- I feel that this has been a very valuatory experience to us to hear your discussions. However, I do wish to point out the basis upon which the city of Savannah made its point earlier today, that it will be three and a half years.

Now, it will take approximately six months in order to complete the fill, a year to settle, and two years to construct. It is physically impossible, I am told by my engineers, for this date to be realistic.

Now, how can you suggest an earlier date in the discussion as the earliest practicable date, when I am advised that this is impossible, from an engineering and technical point of view? We are more than willing to do everything we can. The city of Savannah is committed to its pollution abatement program. However, if we were to proceed today -- and frankly we will be proceeding day after tomorrow in terms of action by the mayor and aldermen in connection with the land fill, the fill for the site -- if everything else proceeds as quickly as possible, I am advised that the earliest time is about three and a half years. That is not July 1, 1973, I wish to point out.

I suspect, and I would like the record to show, that at that time we will, from the vantage point of this point in time, probably require an additional extension.

MR. STEIN: Thank you very much, sir. You can stay up there.

One thing, let me say that I am a lawyer.

MR. FLOYD: I am not.

MR. STEIN: But the other three people up here are engineers, and I get my advice from my three engineers up here, and this is a question. I think your point is well taken, sir.

MR. FLOYD: I just wish to point out for the record that I am neither a lawyer nor an engineer, and in Savannah being one of those two is not a very popular occupation in some quarters.

MR. THOMAN: Mr. Floyd, before you depart, let me make one thing rather clear here: It is my understanding, based on discussions that we have had in the office in the last two weeks on projects in another city, that I apparently am going to have to visit next week, that one of the real deterring things to progress on a contract is the equipment, and certainly to meet this schedule, it should be able or possible for you to award equipment contracts prior to the concrete contract, and that since these are long leadtime items, we certainly will be more than happy to work with you to shave any bit of time off of this thing that we possibly can. This might answer some of Mayor-pro-tem Garfunkel's comments. The minute you get any part of that treatment plant under contract -- and this includes the equipment contracts -- we release the funds on the interceptors.

MR. FLOYD: Very good. I would welcome that opportunity. I am of the opinion that these points are and have been considered by our engineers. However, I have not specifically spoken about this recently with them, and if it were possible, we would rather have it completed even a year before then. But I am told that it is impossible at this point in time, and I feel that we should at least raise this as a potential problem area and have it open so that we can come back at a future date for an extension.

MR. STEIN: Mr. Howard.

MR. HOWARD: Well, I just wanted to say that what Mr. Floyd should do -- if a person hires a lawyer and doesn't like the decision he gets, he fires his lawyer and goes to another one. That wouldn't be very appropriate where engineers are concerned, but I would go back to my engineer and say: You are going to have to do more.

I don't agree with them that it can't be done, and I want them to know it. And I will tell you another thing: if we had had the same priority for getting this pollution cleaned up in the last five years almost as we have had for getting the civic center built, and for getting the historical home restored, and for getting the Skidaway Island built, we would be almost finished. That is what I want to say. It is a matter of priority, and it is also a matter of coordination and making the engineers get with it.

MR. FLOYD: Is Mr. Howard suggesting that there is some technical or professional incompetence on the part of the engineers?

MR. HOWARD: Stop that stuff. No. I know they can do more than they are doing if they get proper authorization and adequate coordination.

MR. FLOYD: Very good, sir. Thank you.

MR. STEIN: Are there any other comments and questions?

Does anyone want to do this? You know Rocky can fire the lawyer, but you know what we say: the lawyers rarely go to jail; it is just the clients.

Do you want to say any more?

I would like to thank you all for coming and participating. I think we have had a very good conference and I think we are on the road, I hope, at least with the city of Savannah, to the cleanup. I think if we all work together, we are going to get the job done.

With that we stand adjourned.

(The conference adjourned at 3:35 p.m.)

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